

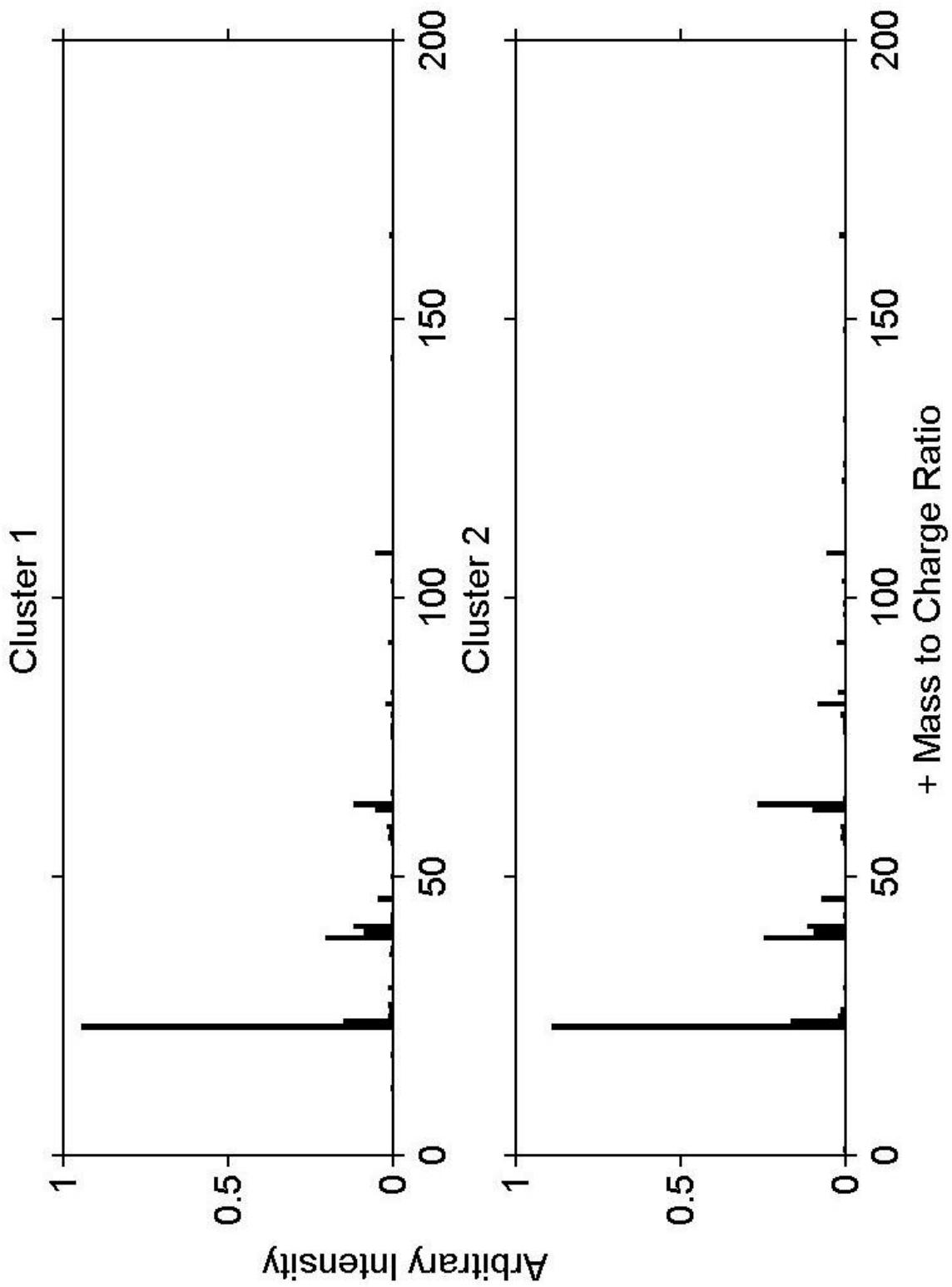
Appendix N: Table showing matching of Azusa to ART-2a dual-ion weight vectors for car vehicle dynamometer: m/z ratio and normalized intensity (vigilance factor = 0.7; 27 clusters)

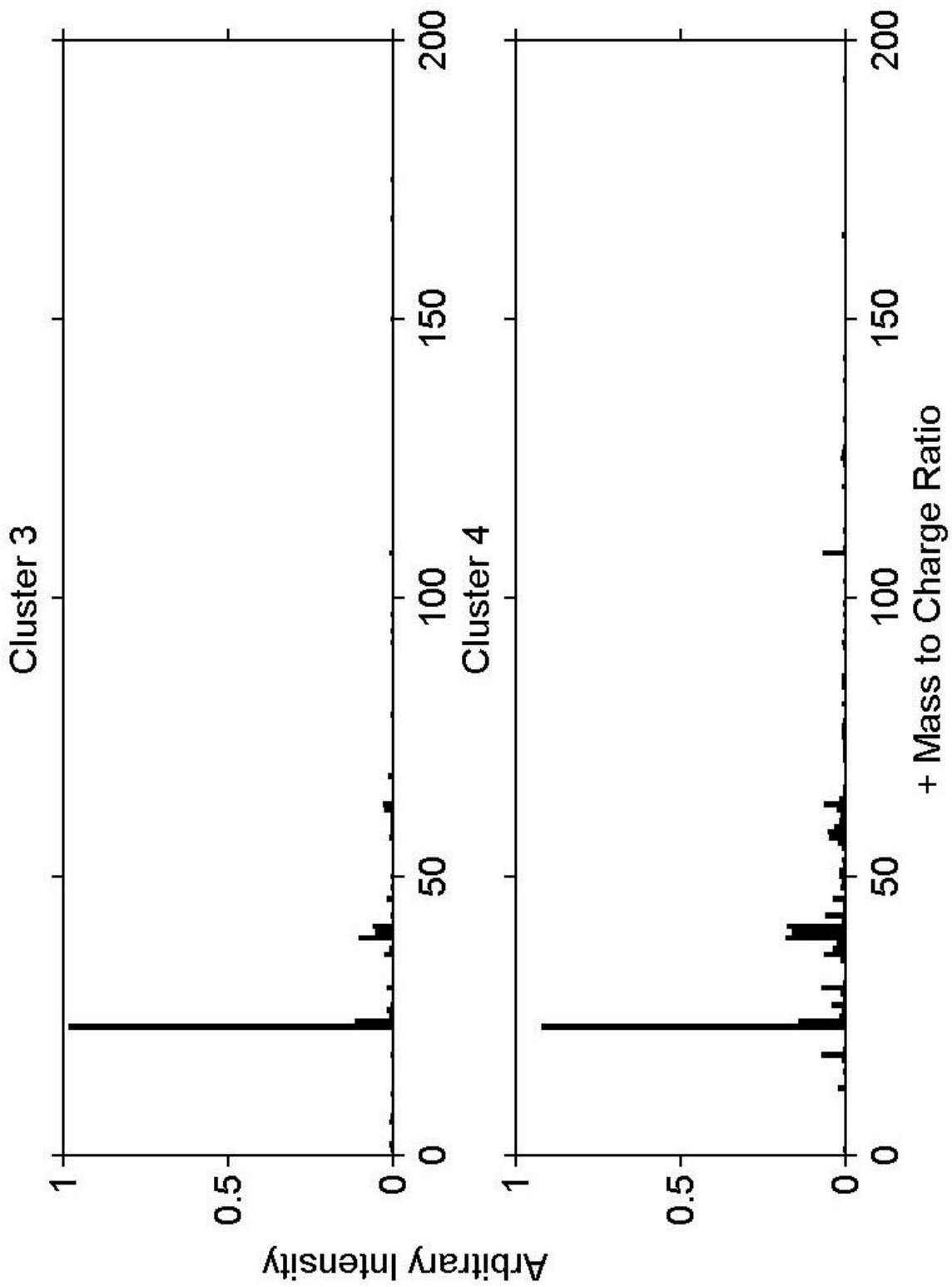
Class #	Number particles in the class	Number	of
		particles matched to the	to class
Cars	Azusa		
1	141	35	
2	122	348	
3	83	0	
4	65	0	
5	47	0	
6	44	28	
7	42	441	
8	39	22	
9	38	284	
10	35	4	
11	28	146	
12	27	9	
13	27	0	
14	22	0	
15	22	34	
16	21	1	
17	19	4	
18	19	32	
19	18	3	
20	18	12	
21	18	39	
22	17	268	
23	17	27	
24	16	329	
25	14	0	
26	12	0	
27	11	106	

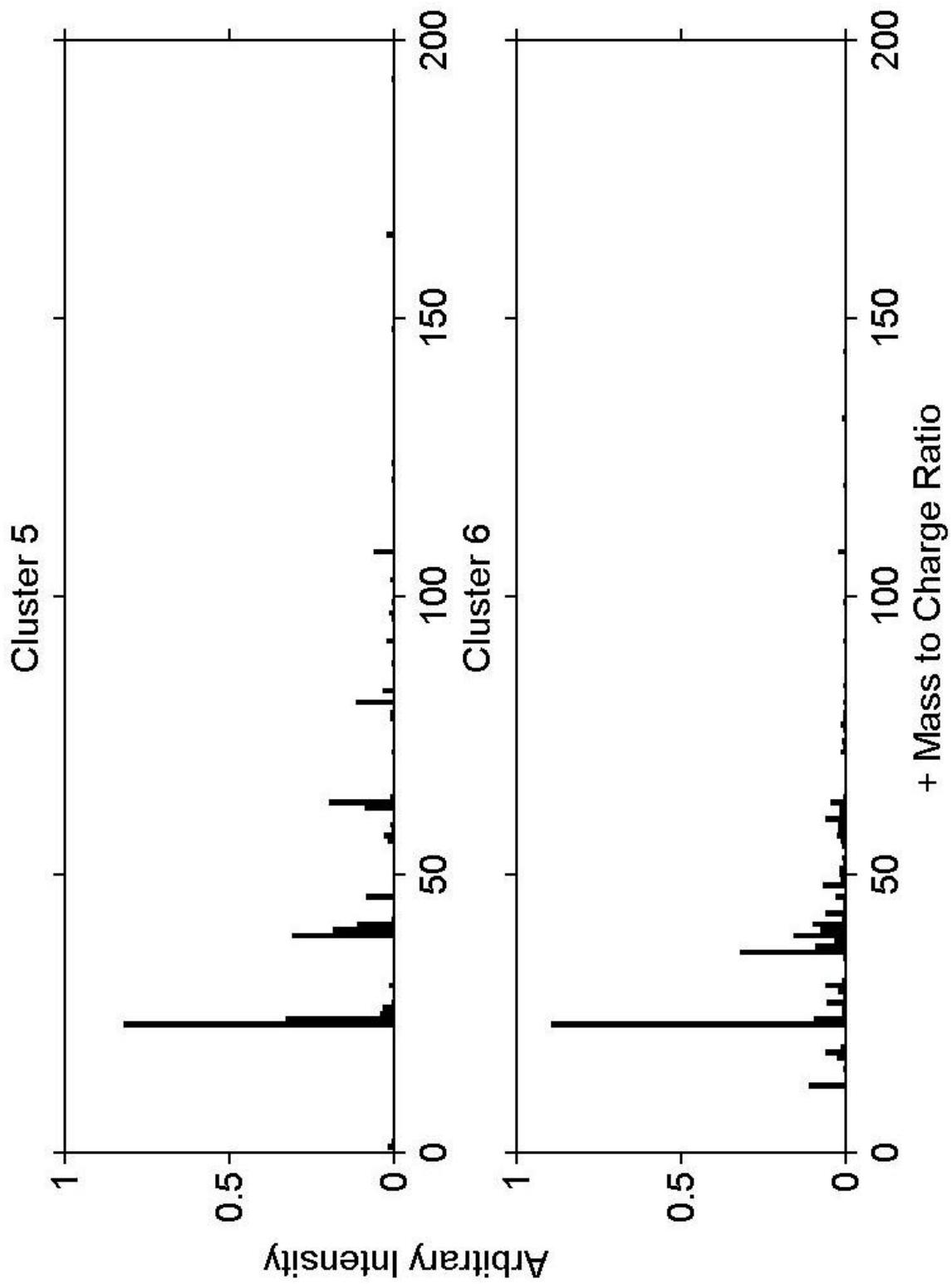
Appendix O: ART-2a positive-ion weight vectors for Diamond Bar, Mira Loma, and Riverside ambient during trajectory-matched times September 27-29, 1997: m/z ratio and normalized intensity (vigilance factor = 0.7; 57 clusters)

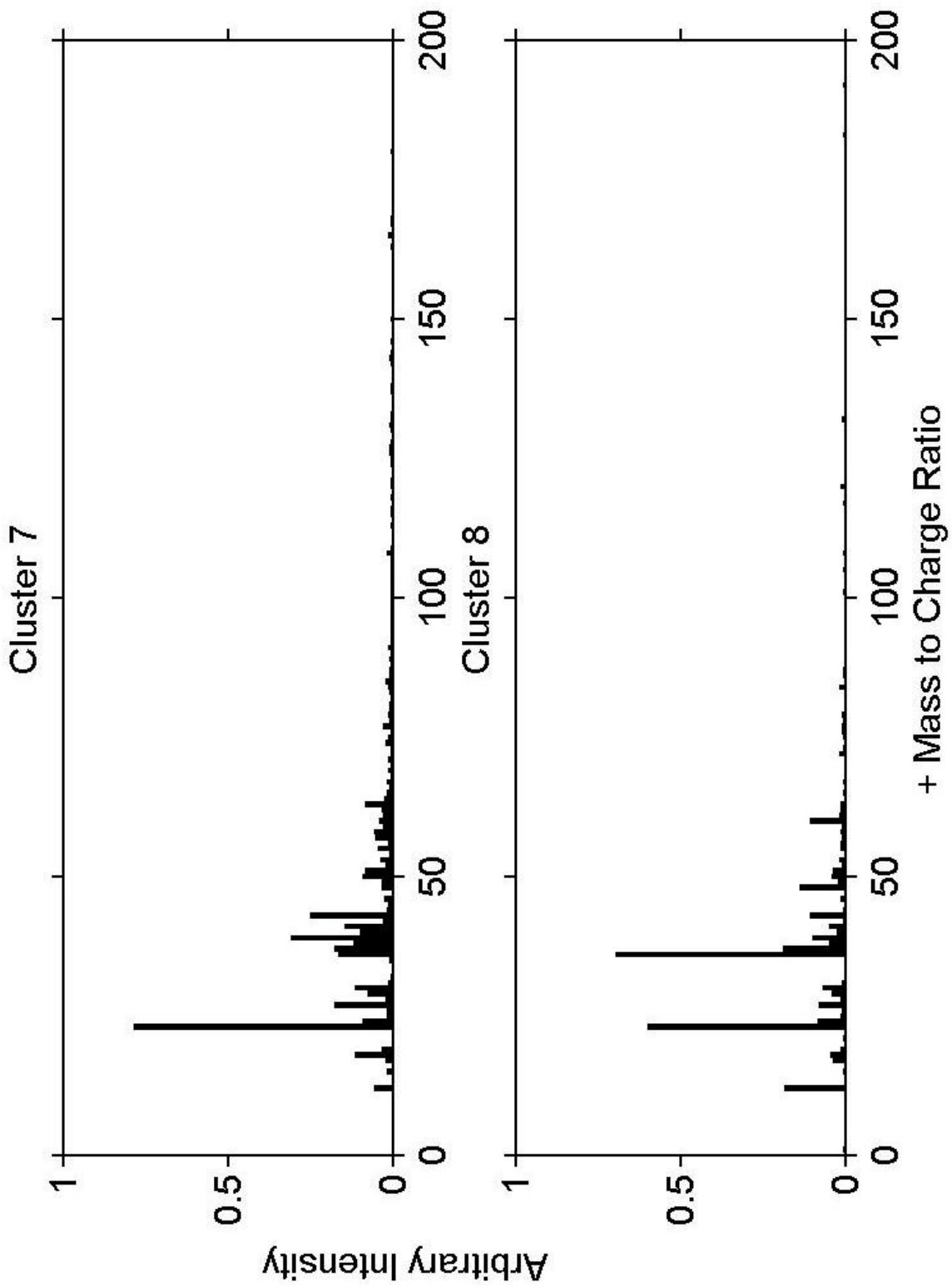
Class #	Number of particles matched to the class	Number of particles matched to the class	Number of particles matched to the class
	Diamond Bar	Mira Loma	Riverside
1	10,175	437	4320
2	3825	71	62
3	5779	910	37,075
4	2946	172	836
5	2222	253	14,181
6	2102	218	454
7	895	154	88
8	1033	202	238
9	718	312	256
10	529	141	428
11	728	442	836
12	540	331	759
13	638	72	66
14	745	1584	2169
15	428	198	272
16	686	102	922
17	713	64	2756
18	591	893	267
19	614	277	520
20	492	1065	80
21	502	479	1255
22	391	238	1521
23	565	229	40
24	310	147	1006
25	384	445	423
26	211	174	301
27	374	178	594
28	317	316	560
29	365	219	597
30	259	153	149
31	264	90	157
32	72	249	10
33	24	67	1
34	209	204	167
35	49	78	10

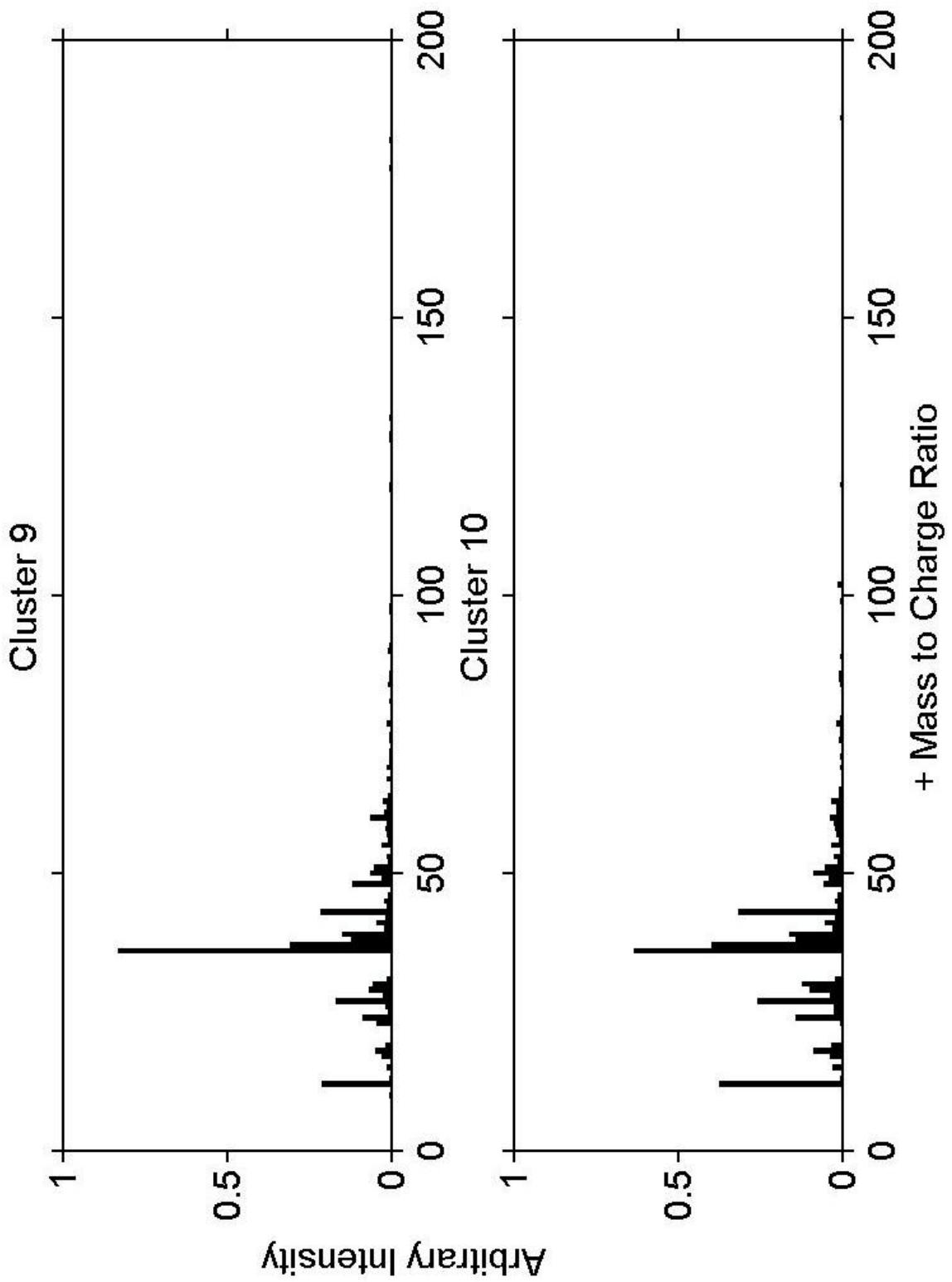
Class #	Number of particles matched to the class Diamond Bar	Number of particles matched to the class Mira Loma	Number of particles matched to the class Riverside
36	227	45	108
37	57	35	0
38	134	39	431
39	30	56	9
40	50	24	70
41	171	22	16
42	39	50	179
43	1	0	967
44	0	4	894
45	6	9	1444
46	3	0	753
47	1	0	289
48	3	0	357
49	0	2	434
50	0	0	752
51	3	12	528
52	24	19	509
53	3	0	384
54	1	2	358
55	44	17	216
56	9	0	346
57	2	6	257

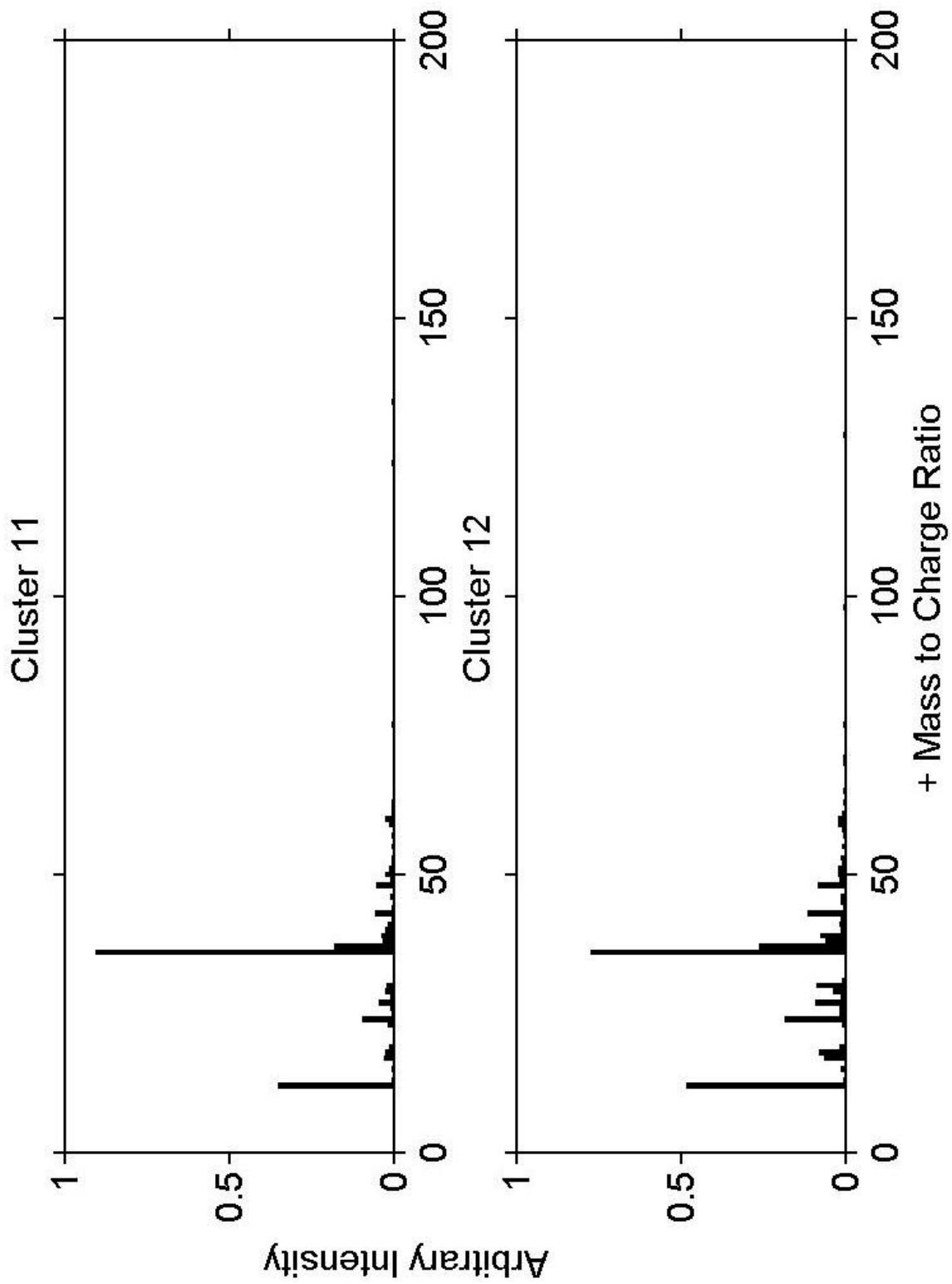


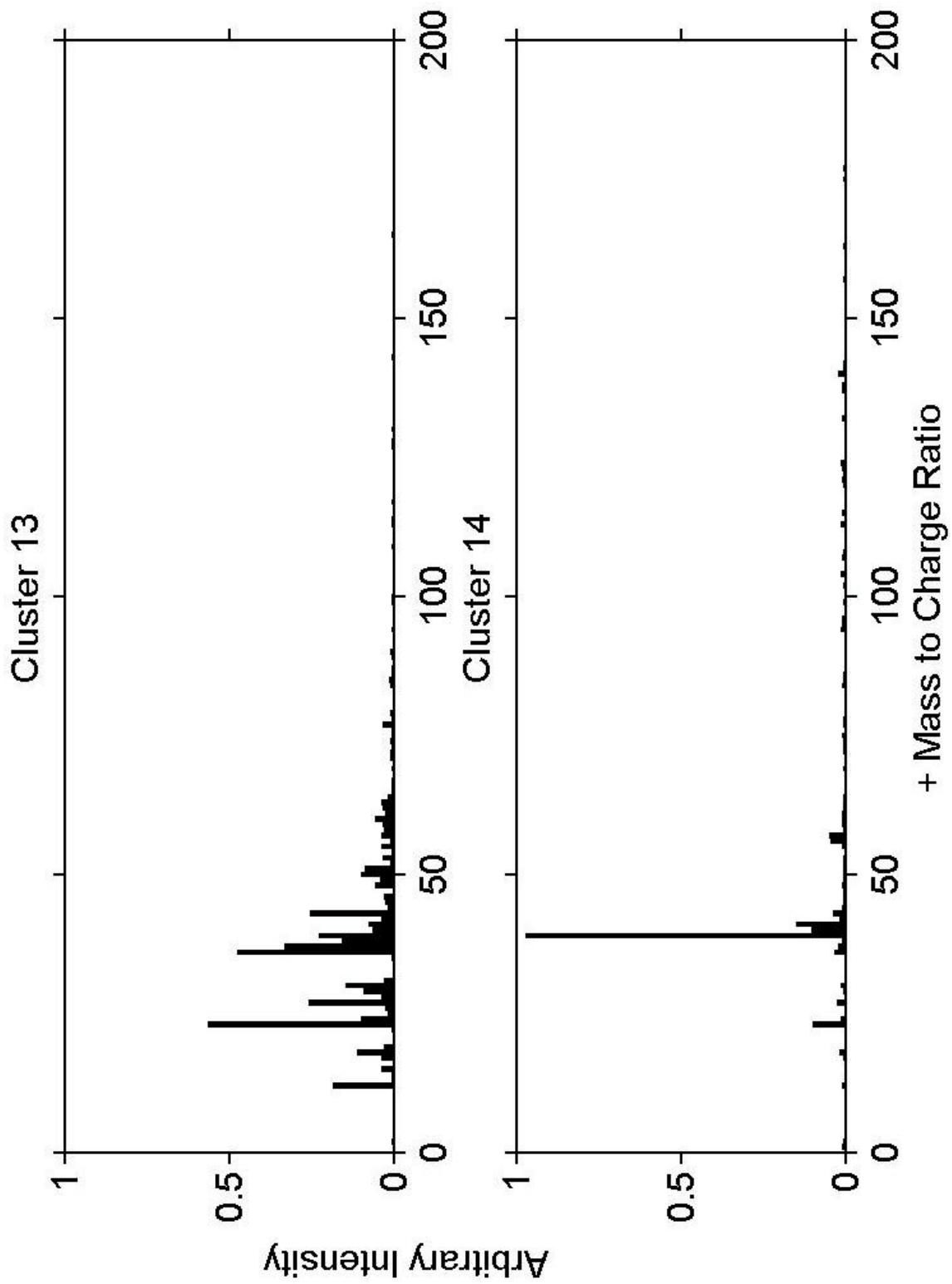


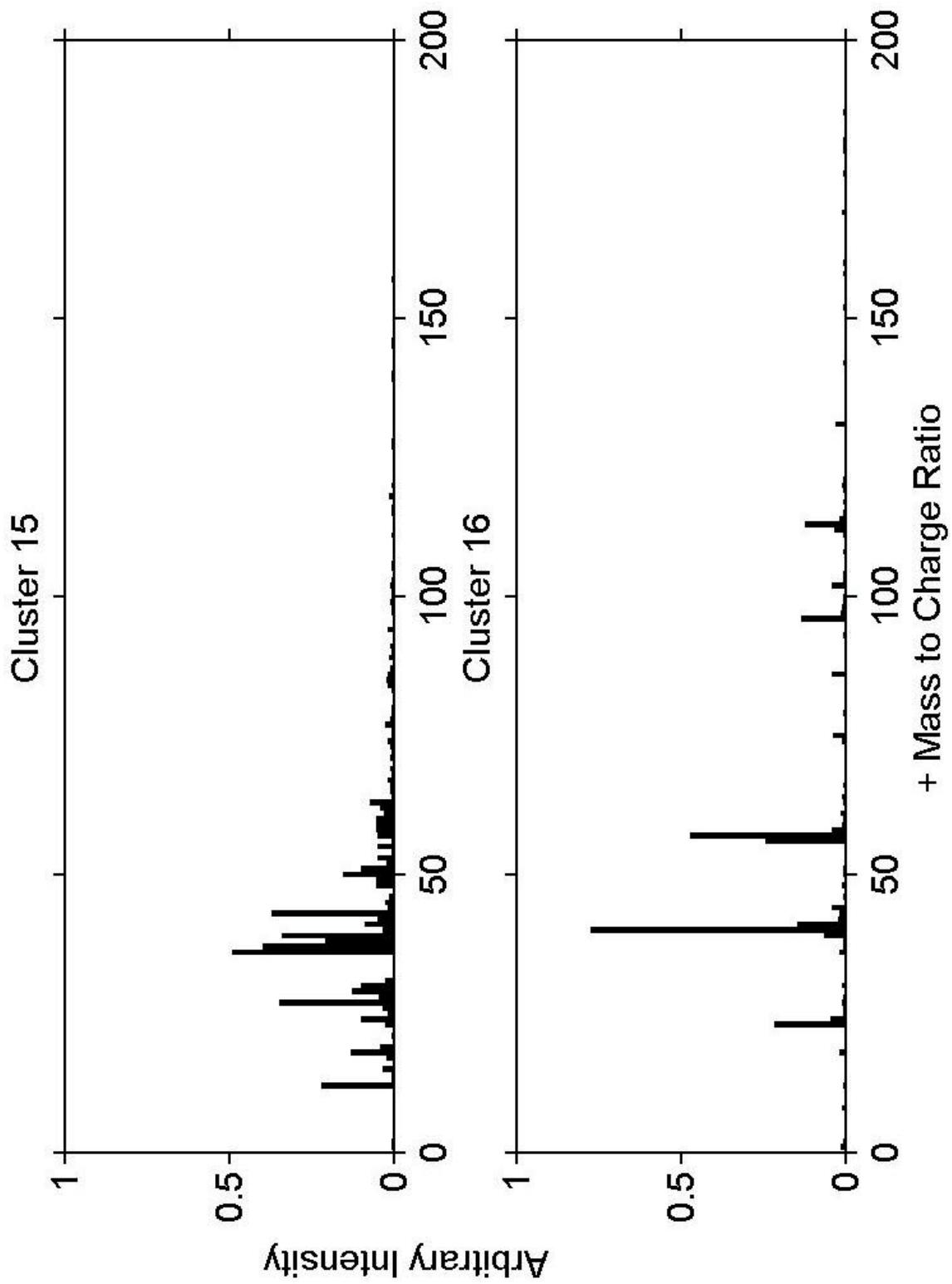


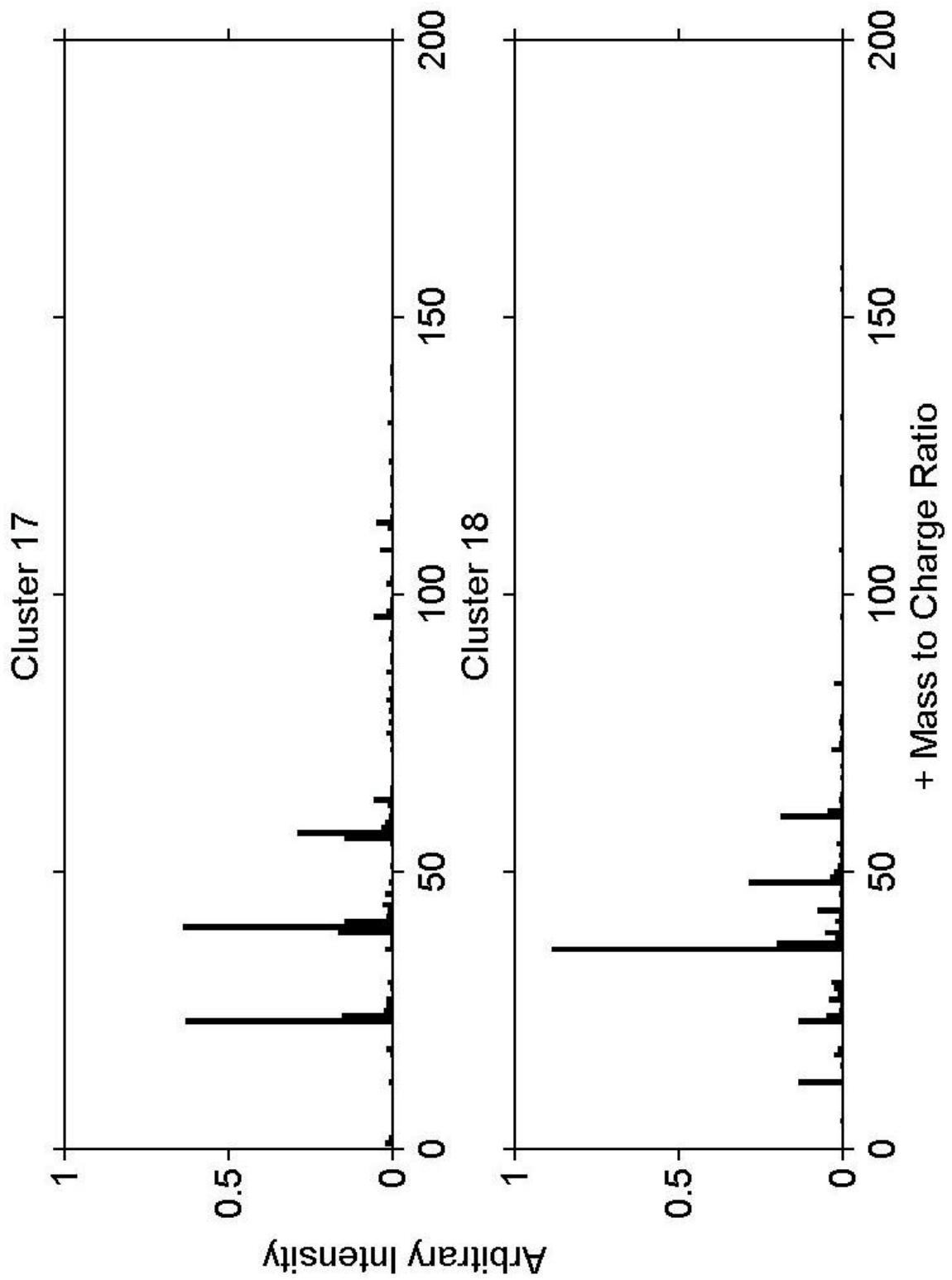


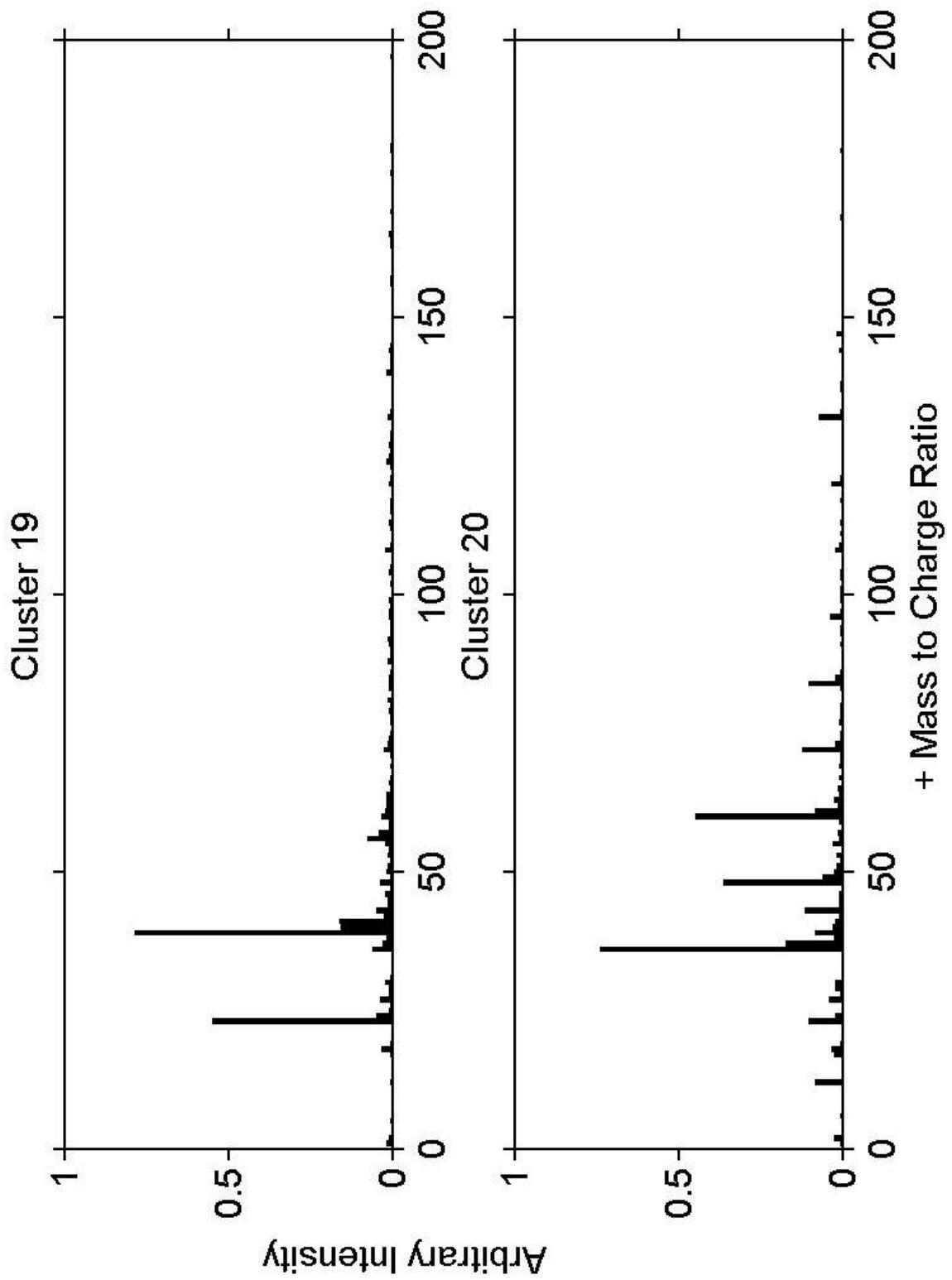


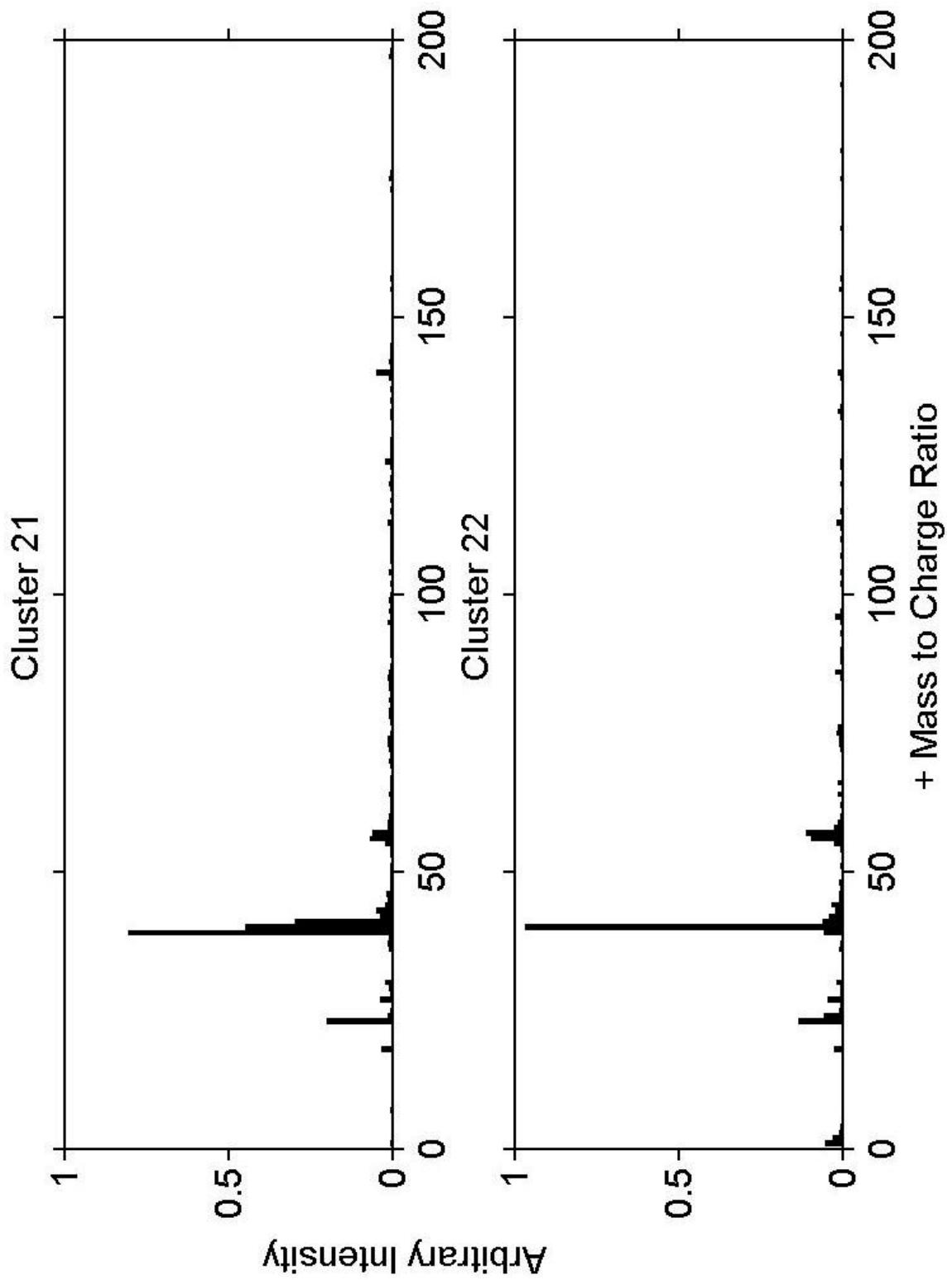


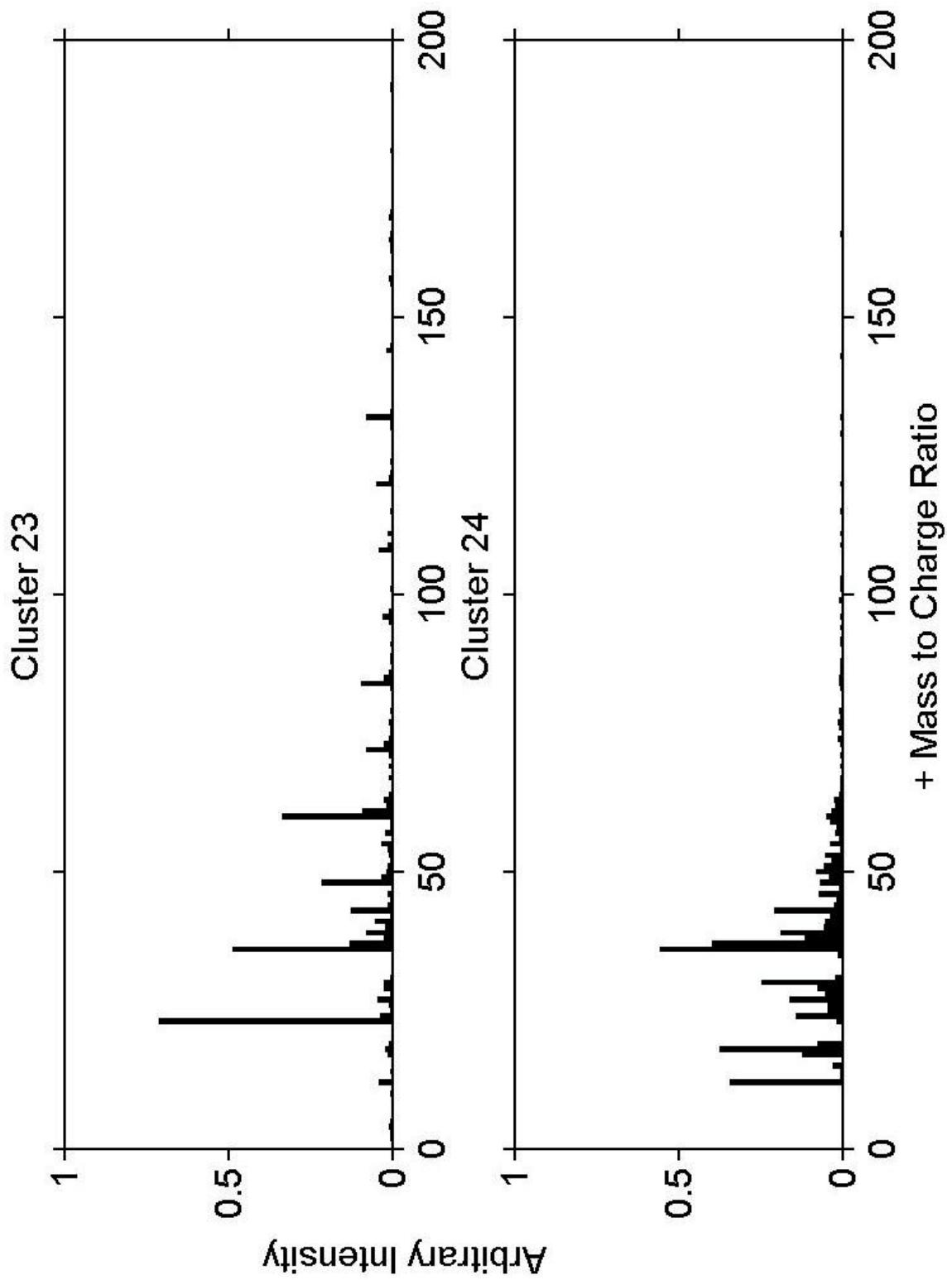


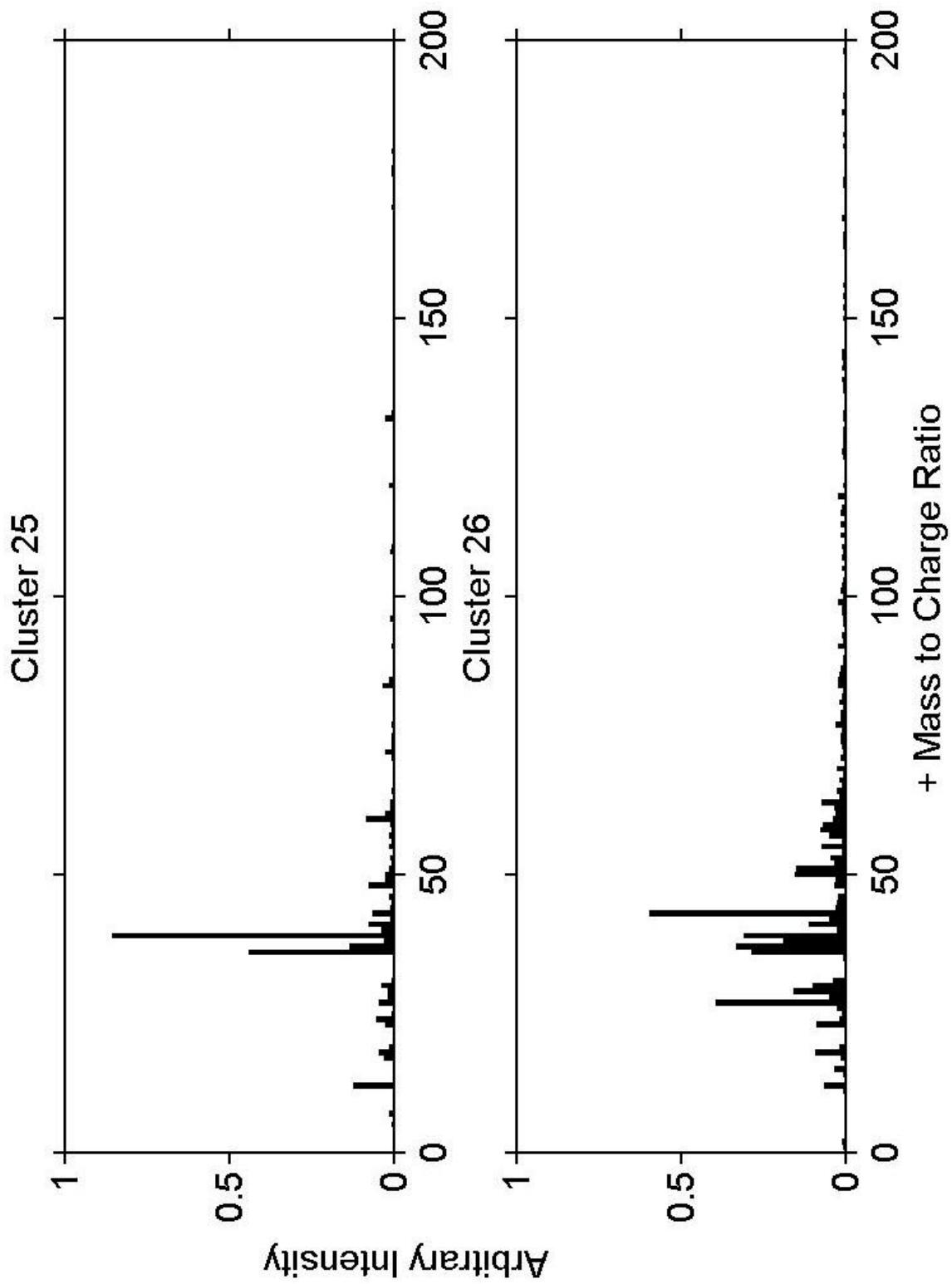


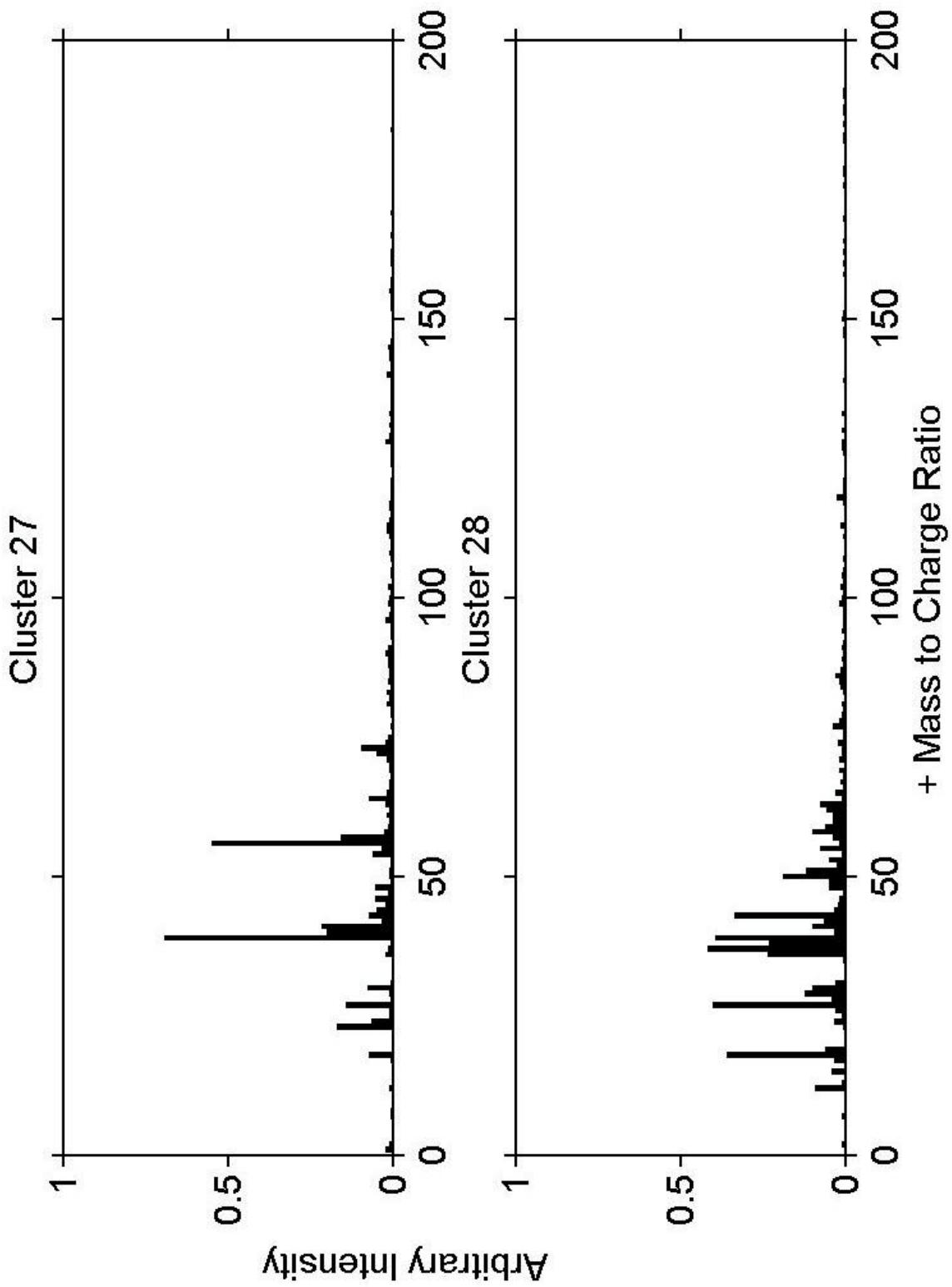


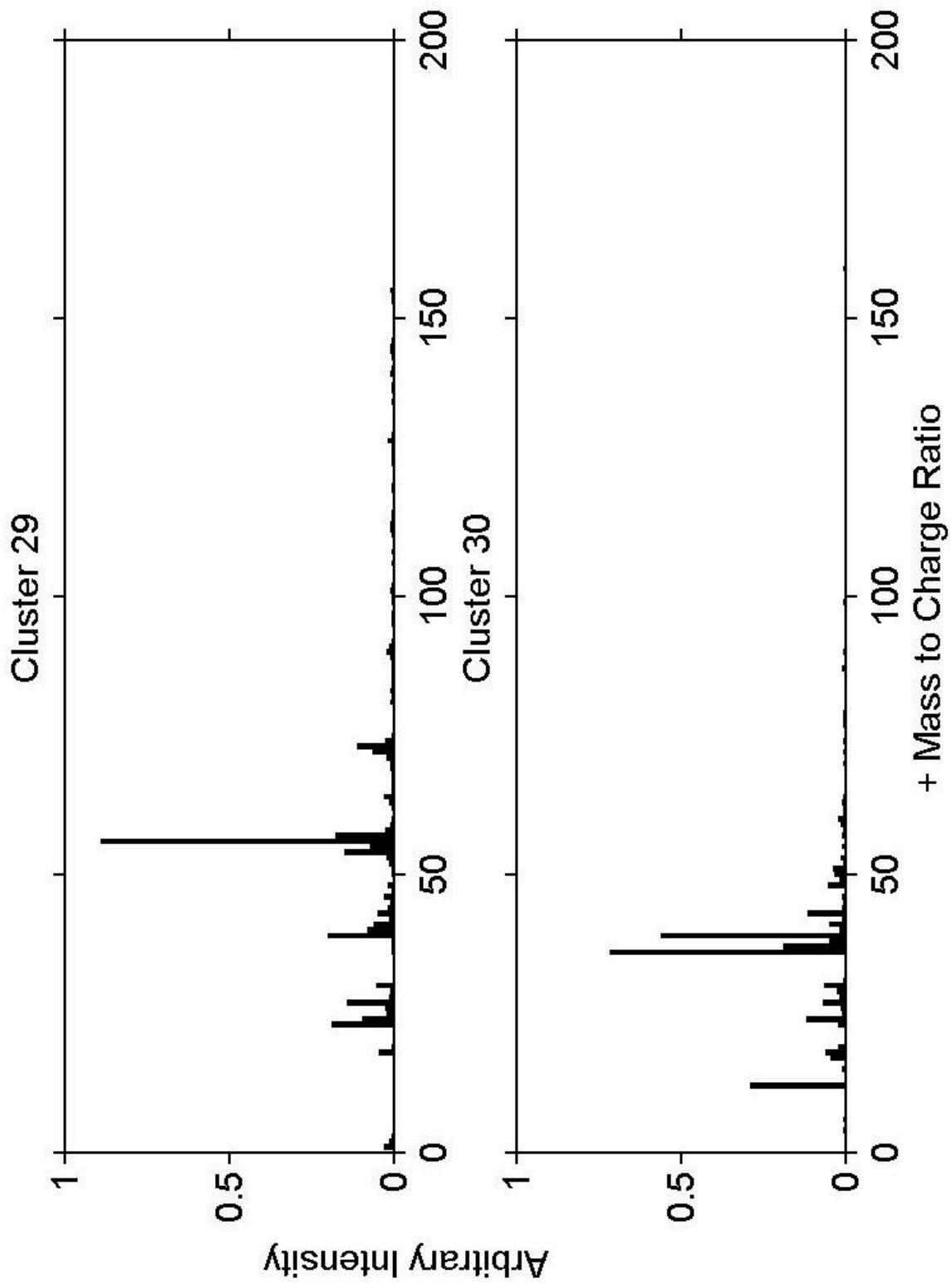


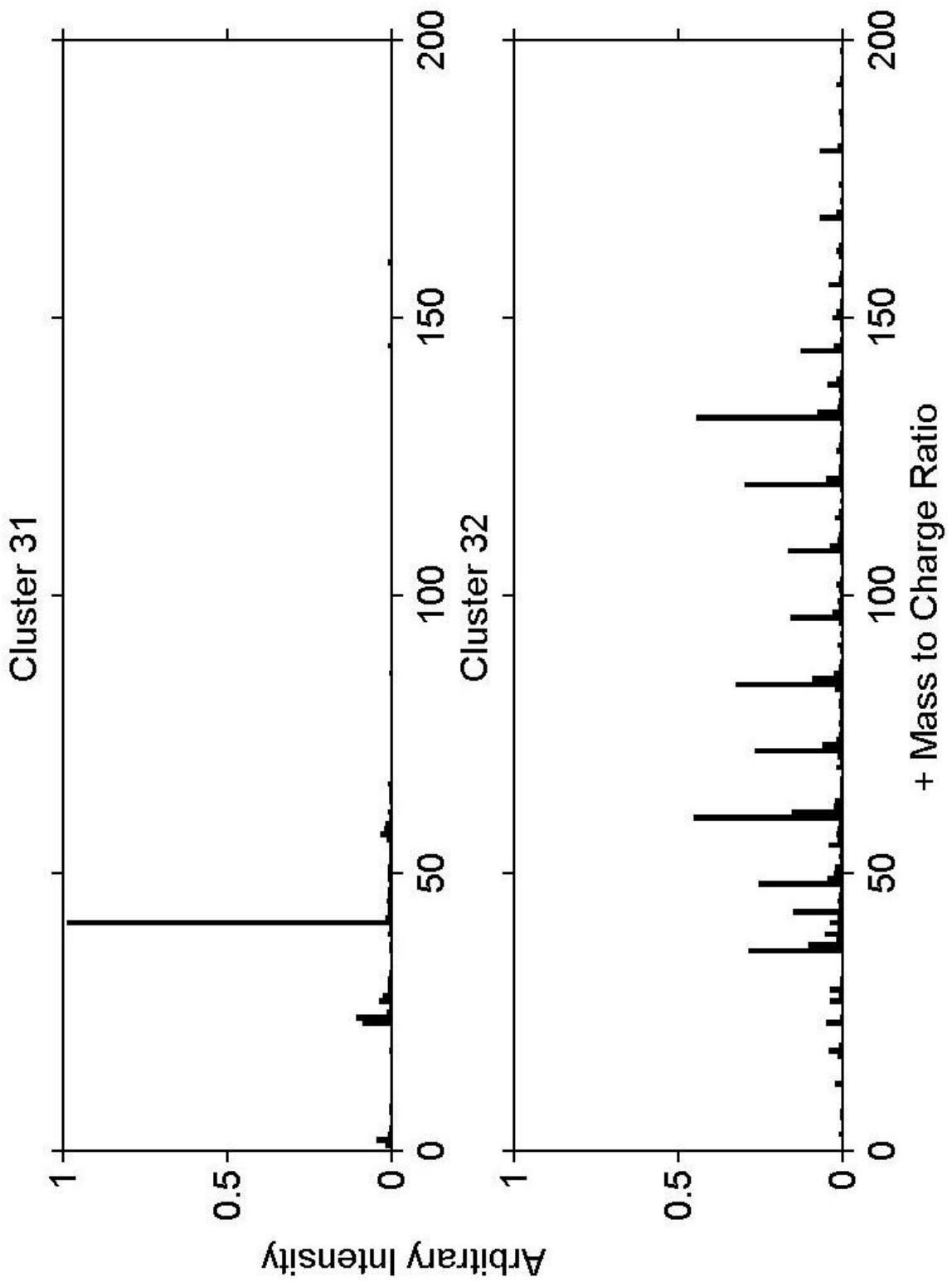


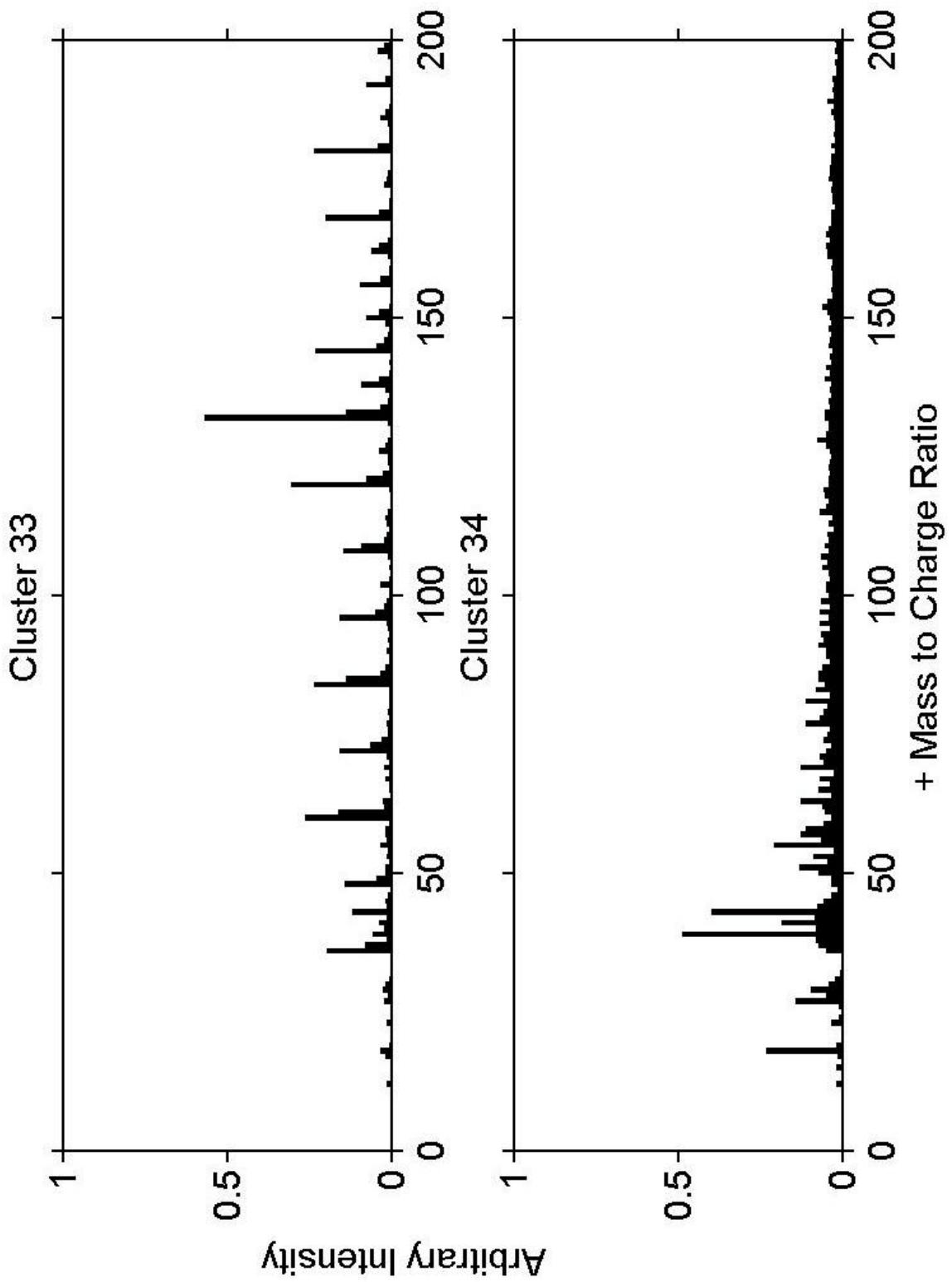


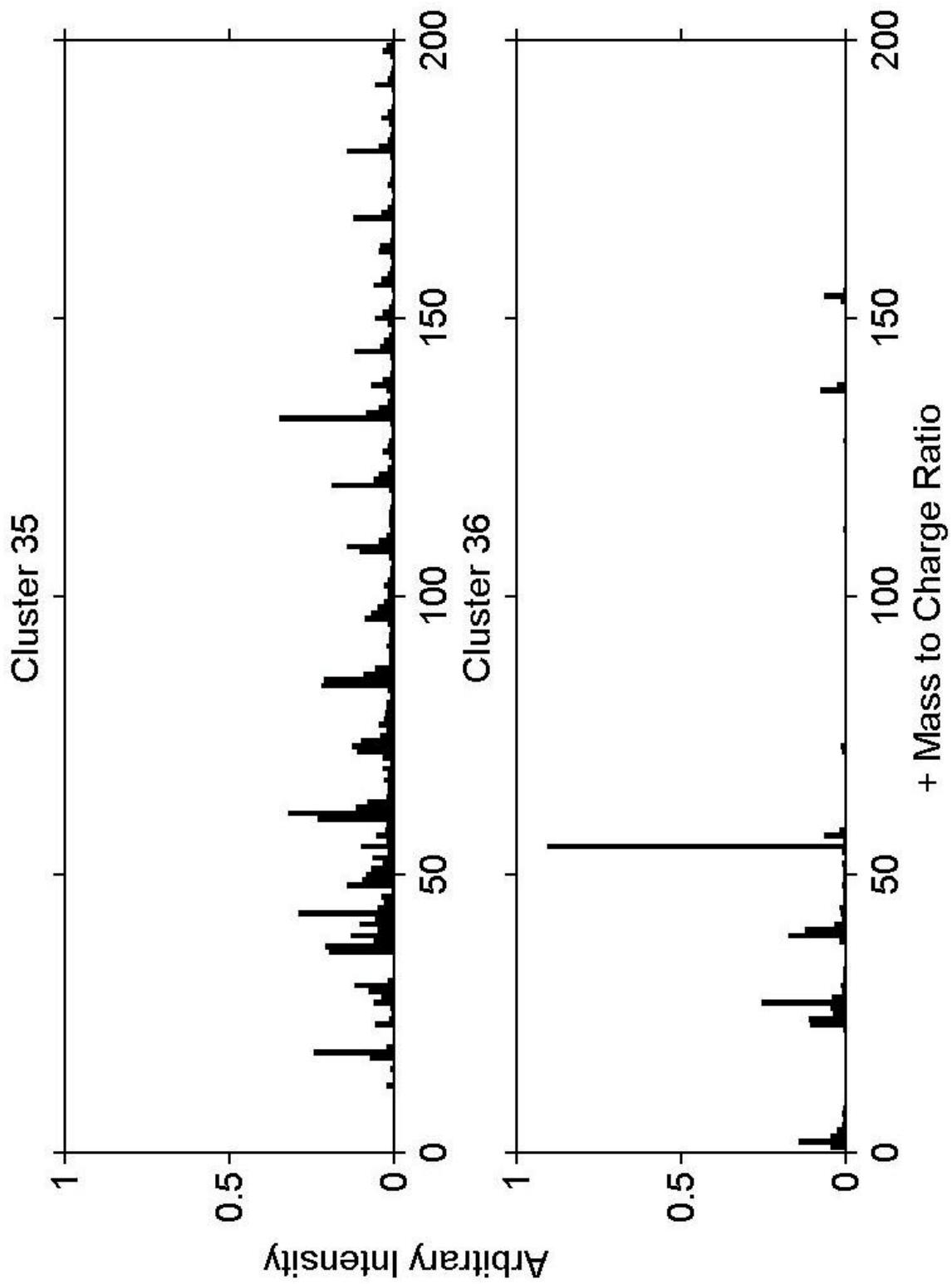


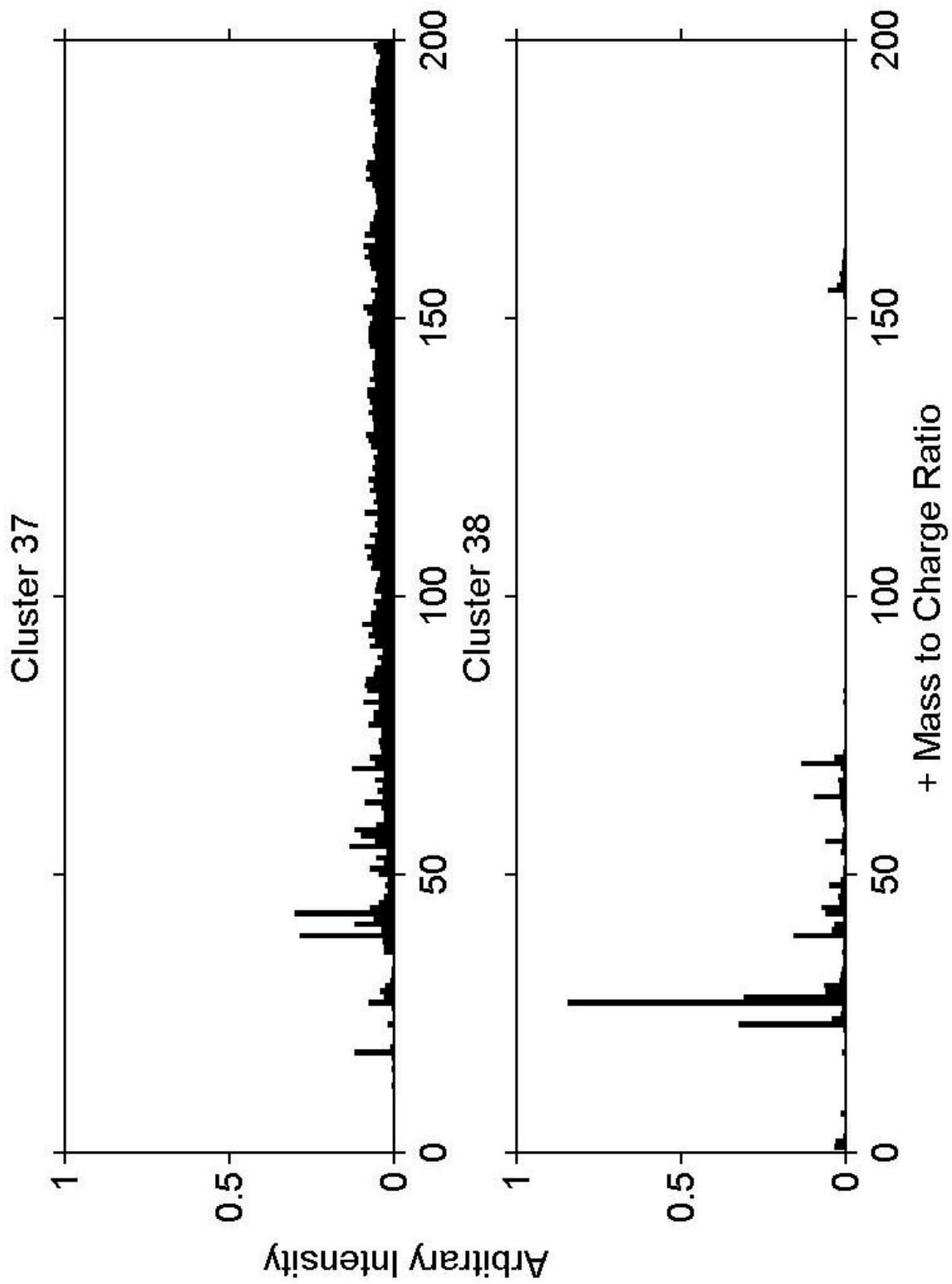


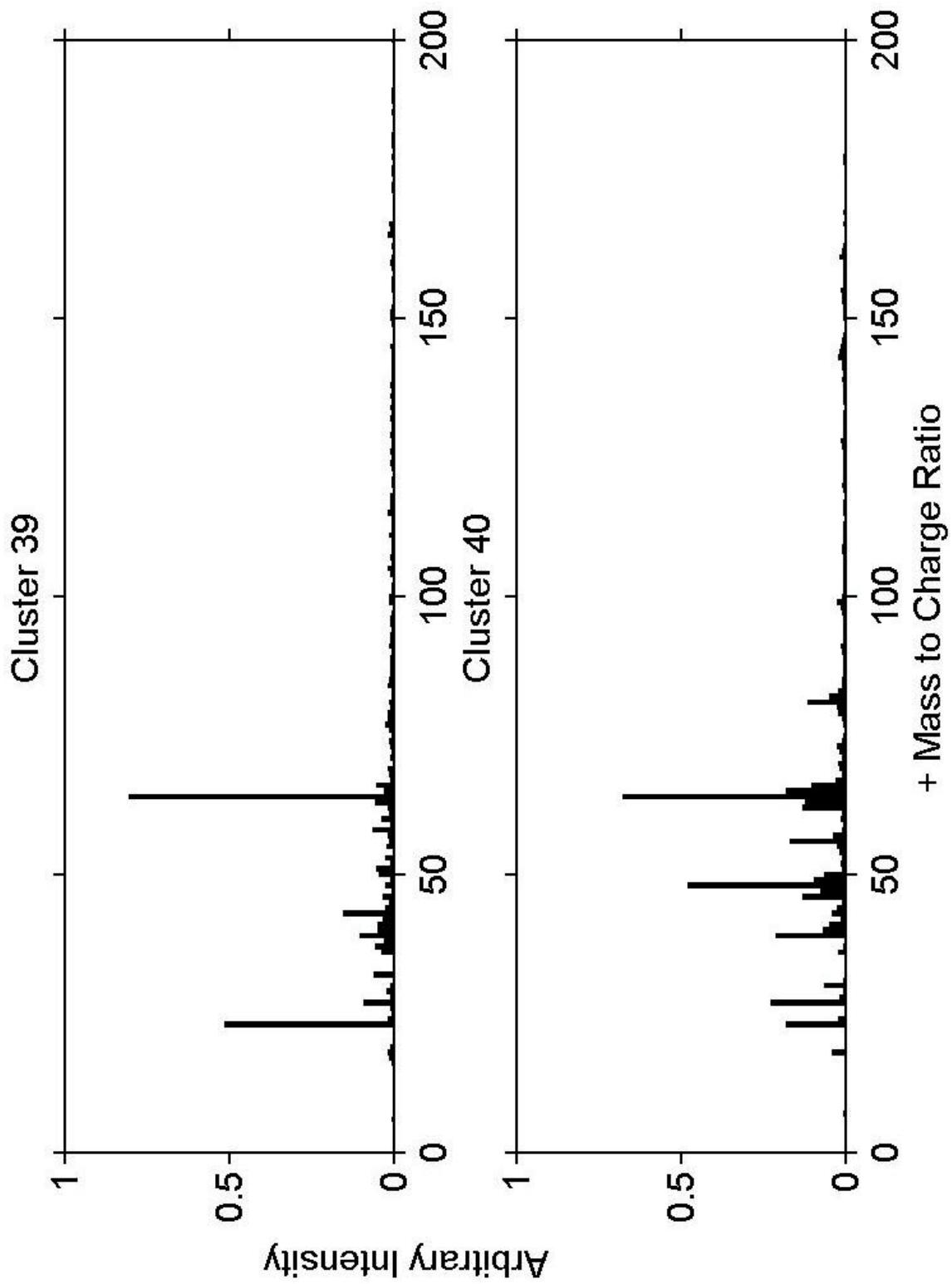


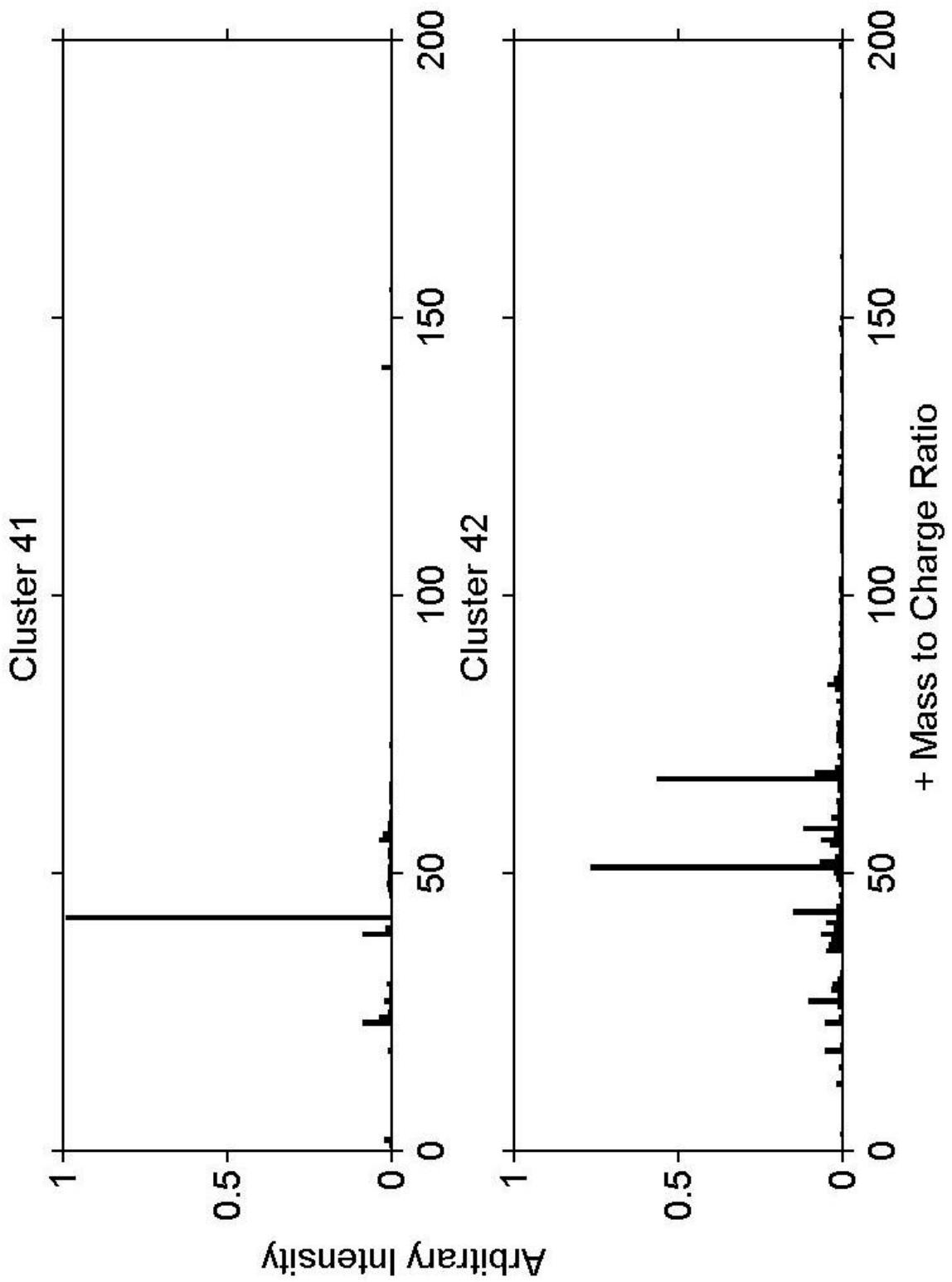


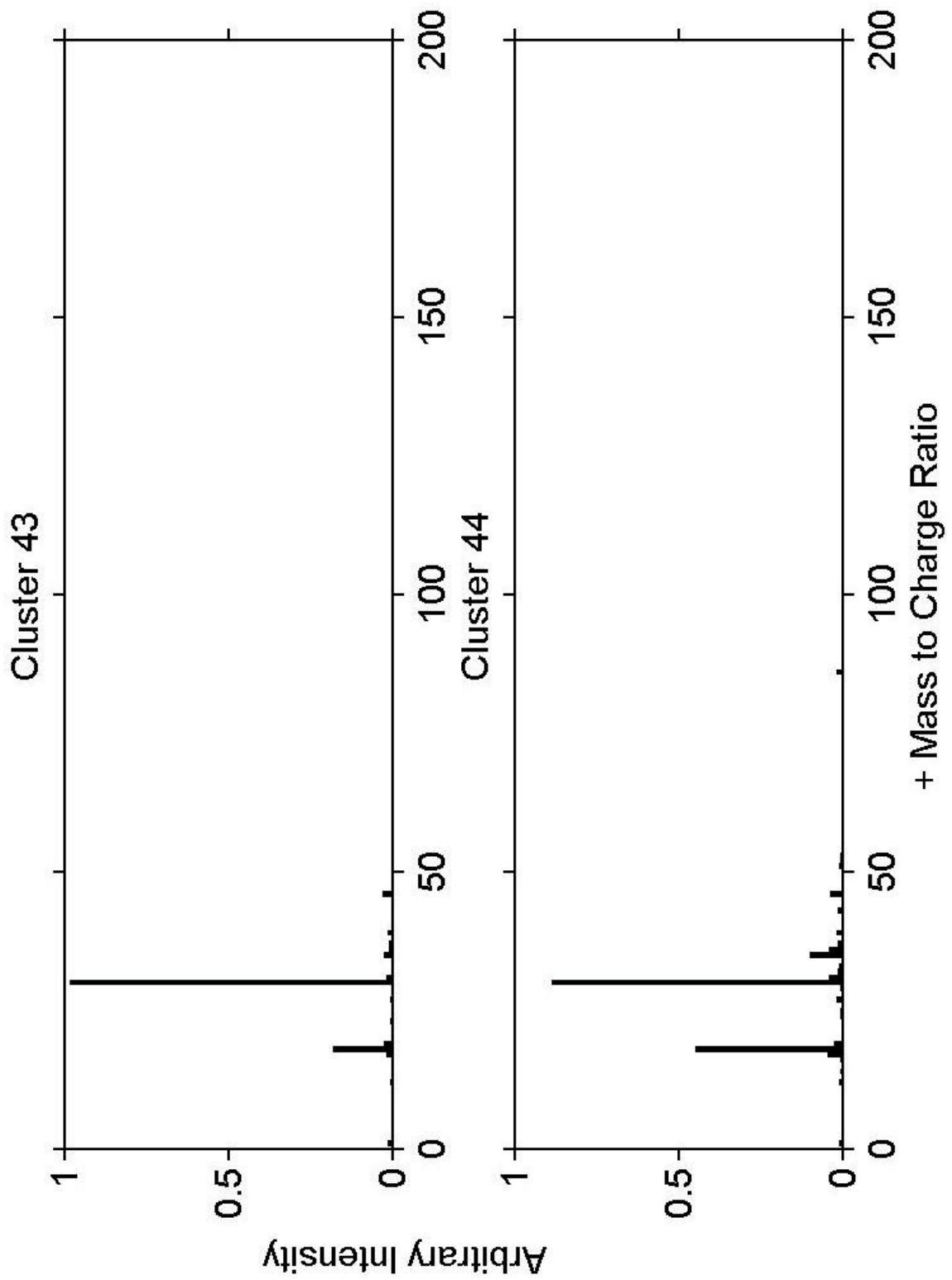


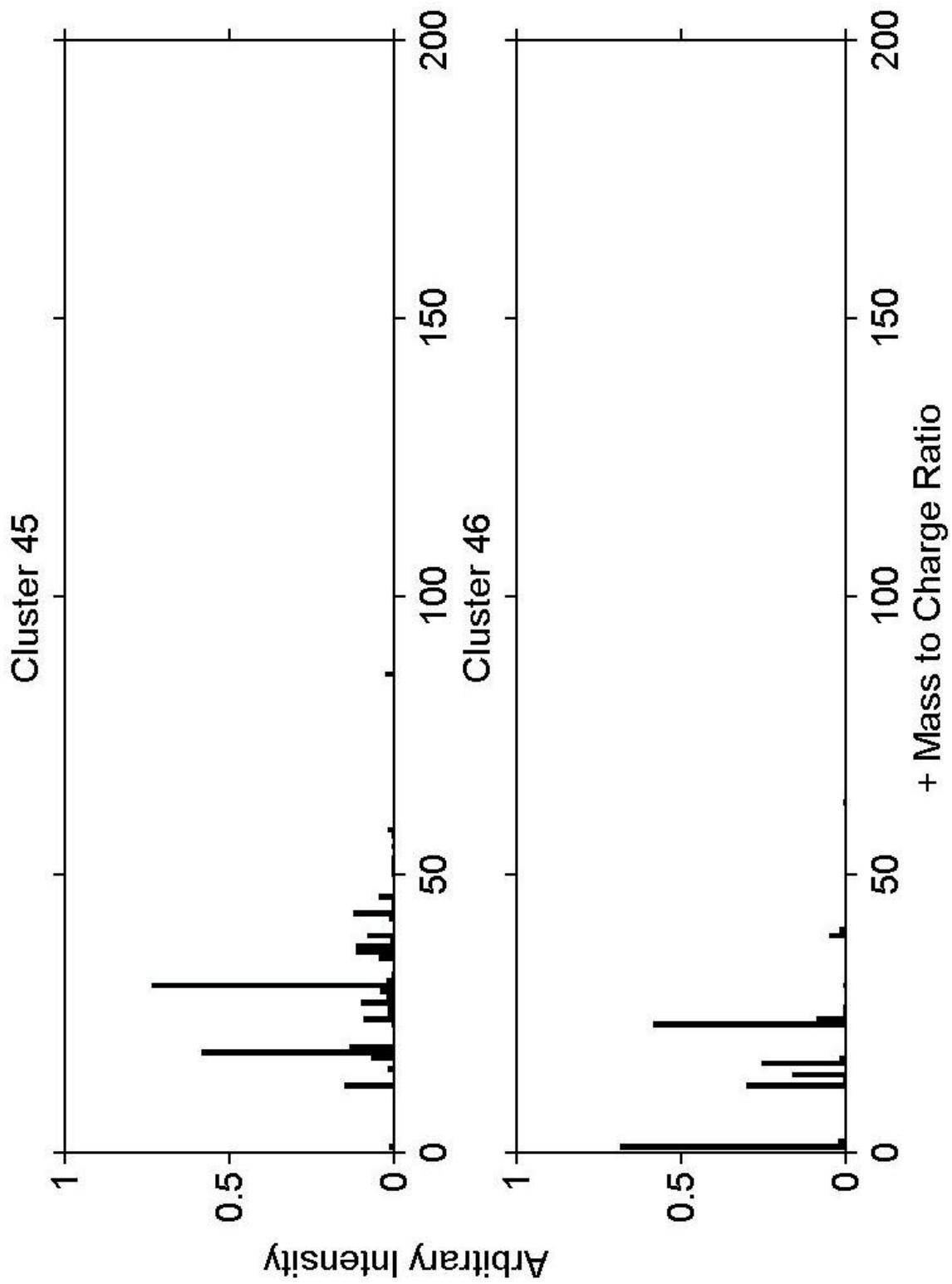


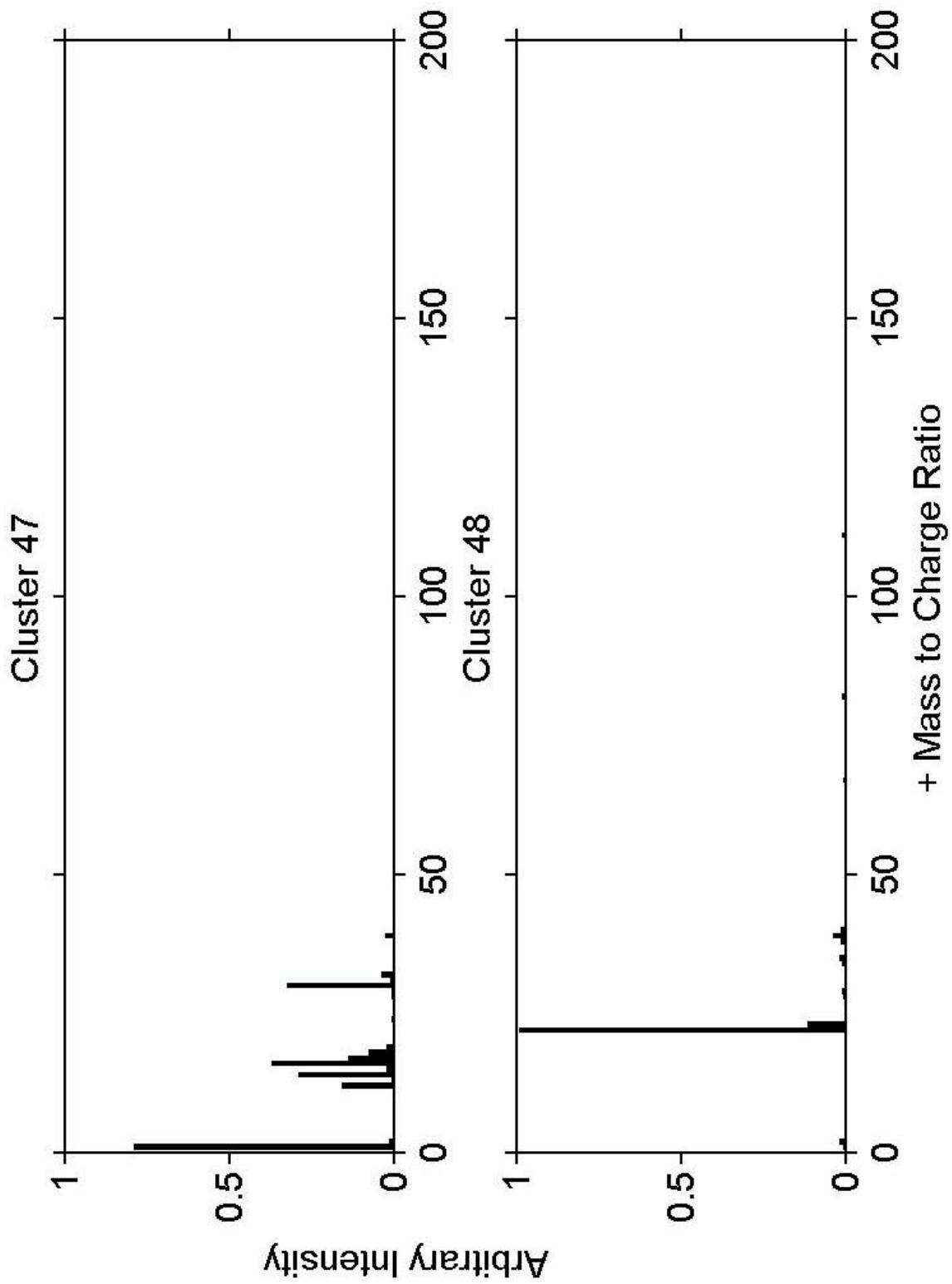


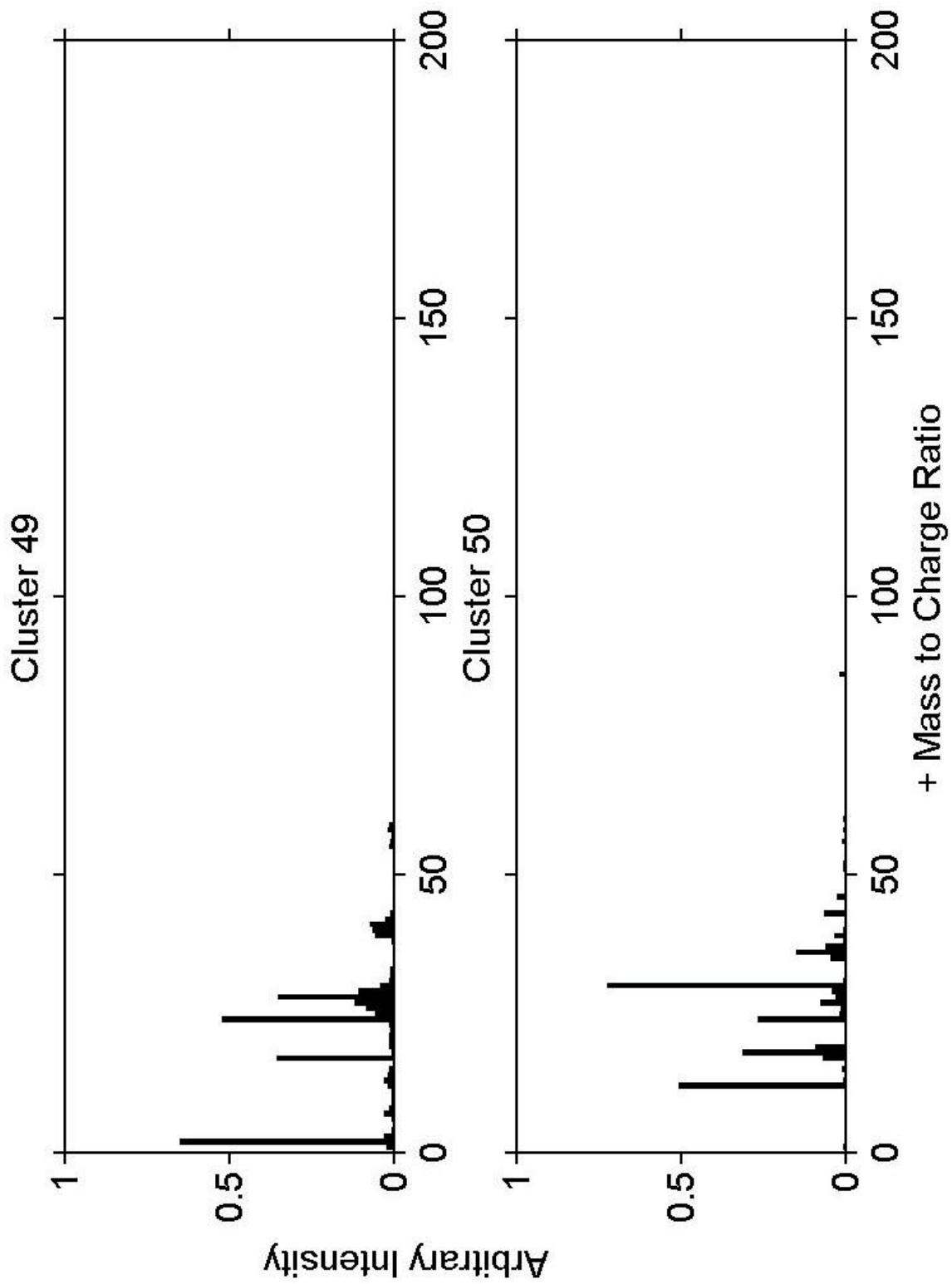


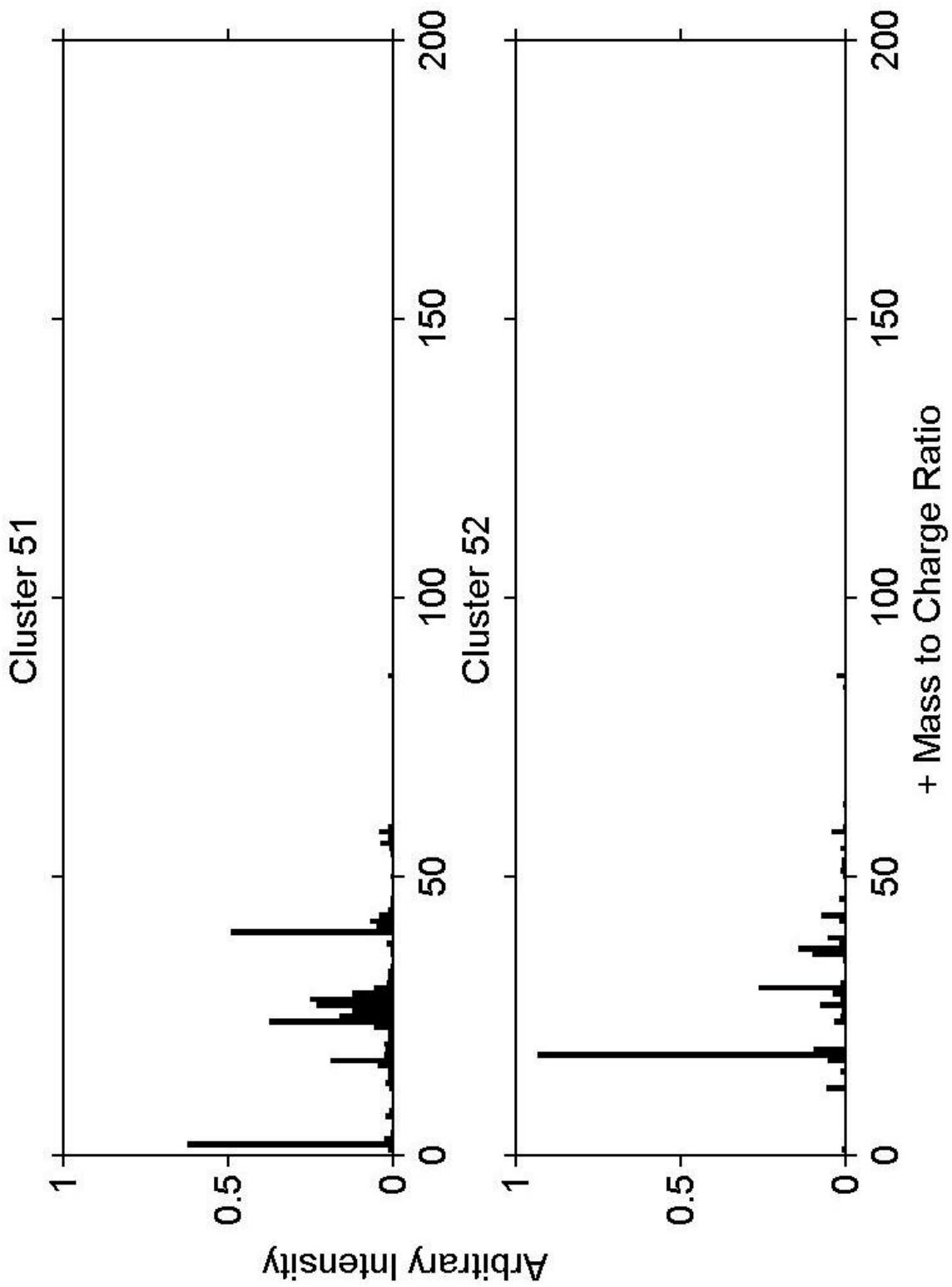


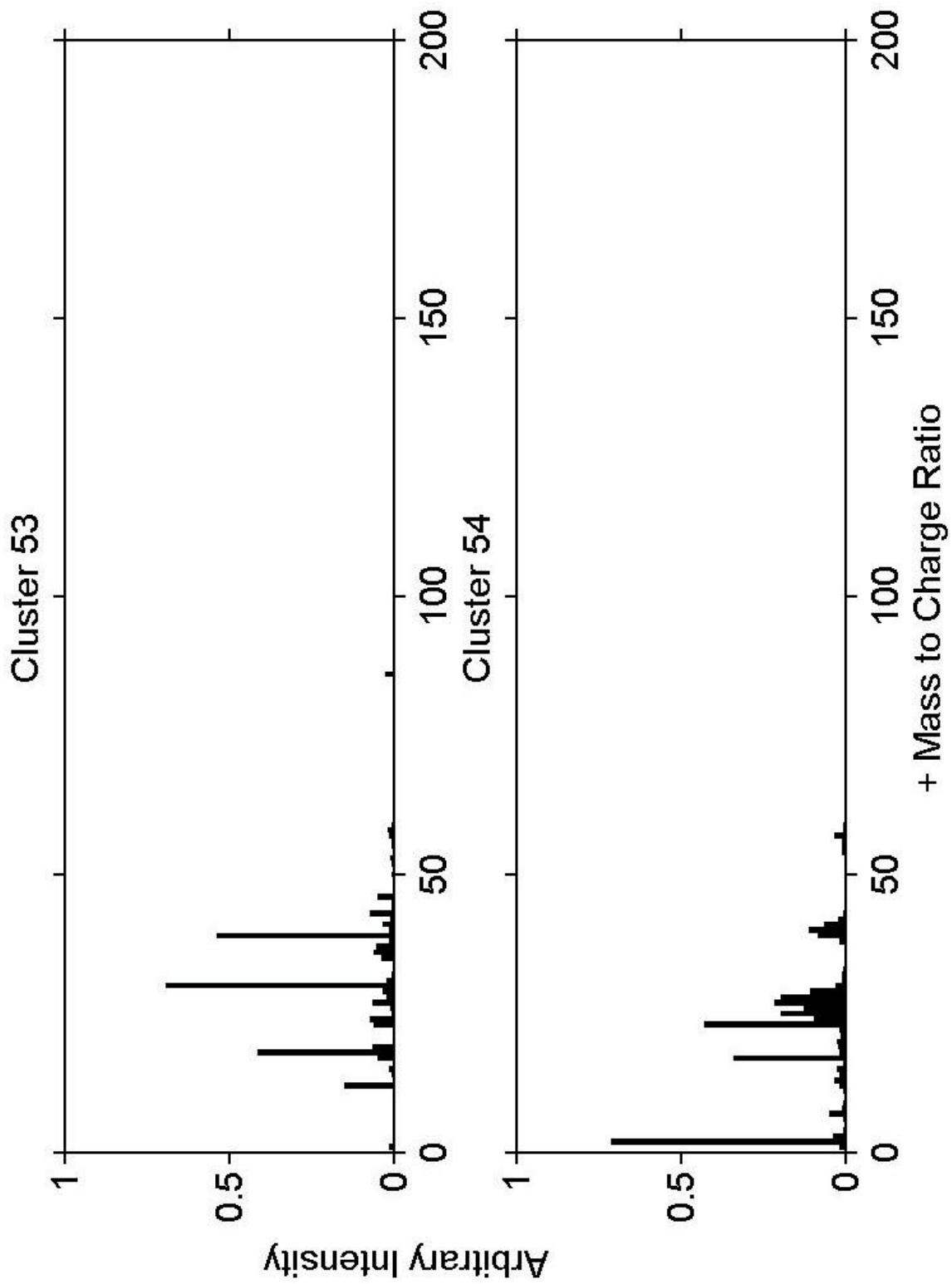


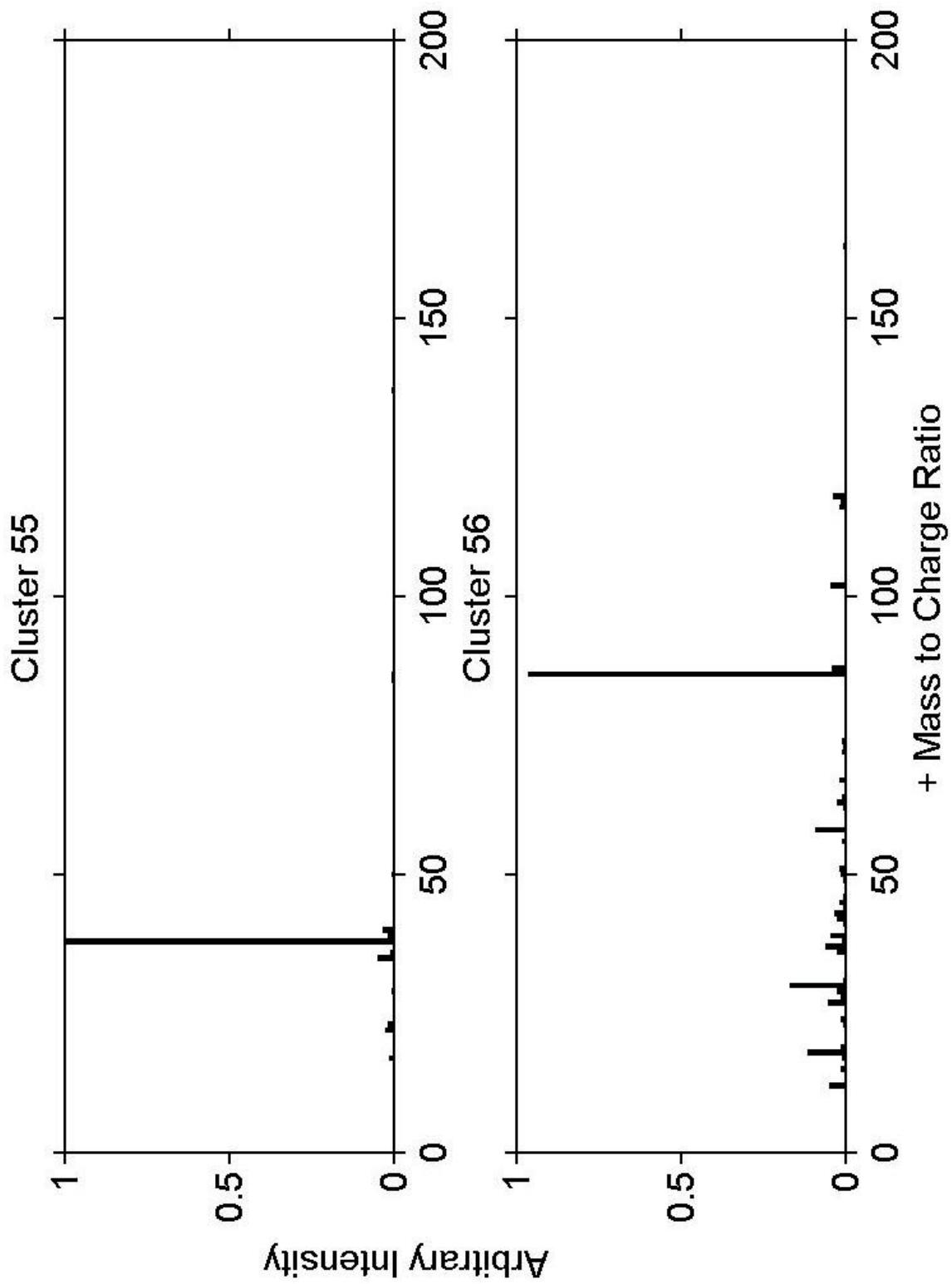


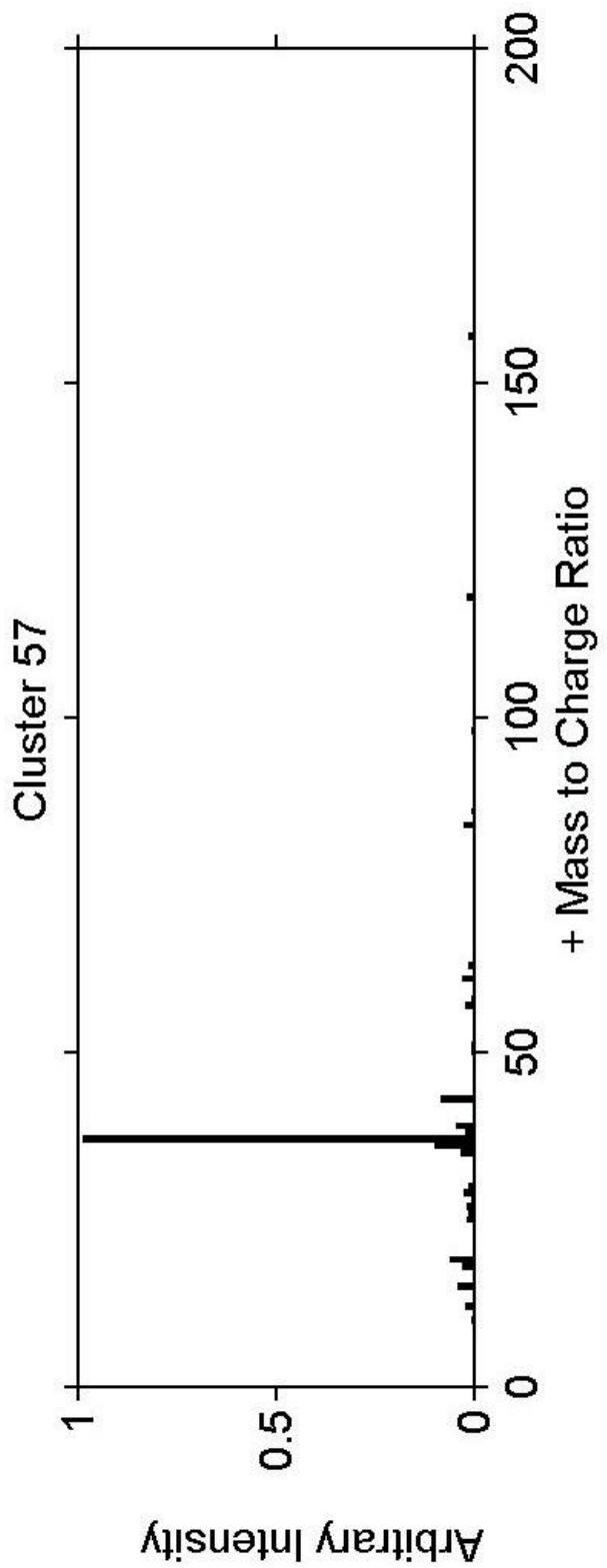












Appendix P: Color versions of similarity plots presented in the body of the report in grayscale. A red to blue color-coding replaces the white to black grayscale coding. See the body of the report for captions and additional information.

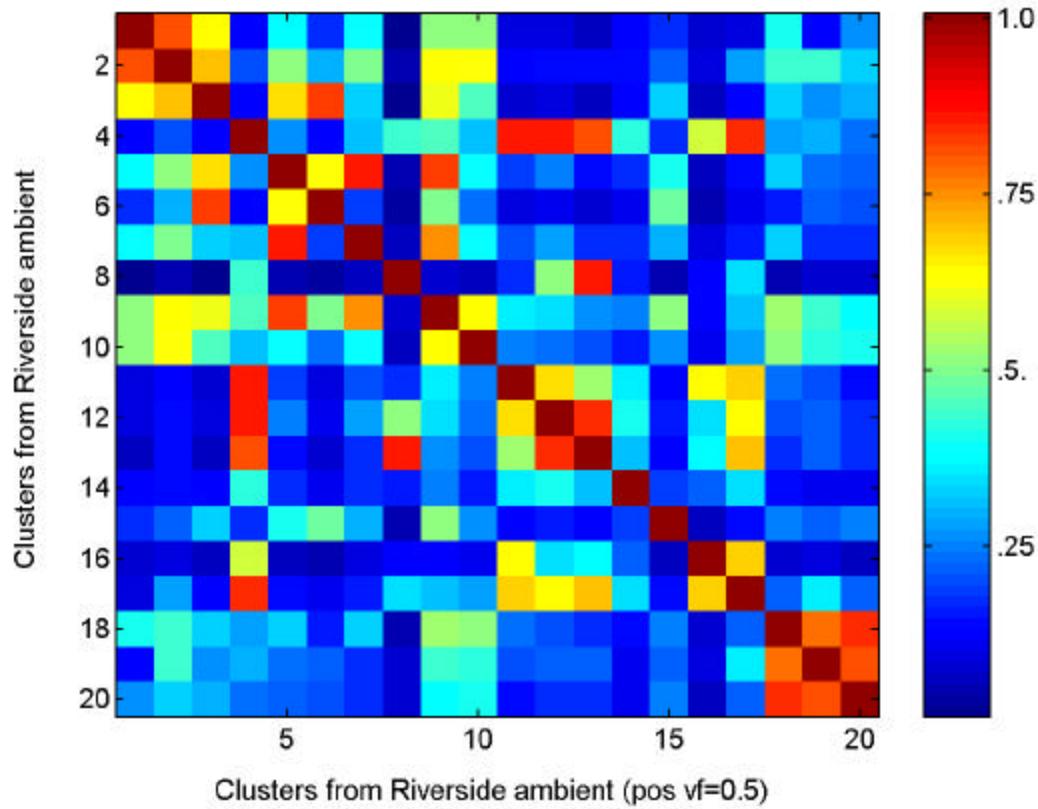


Figure 2.5

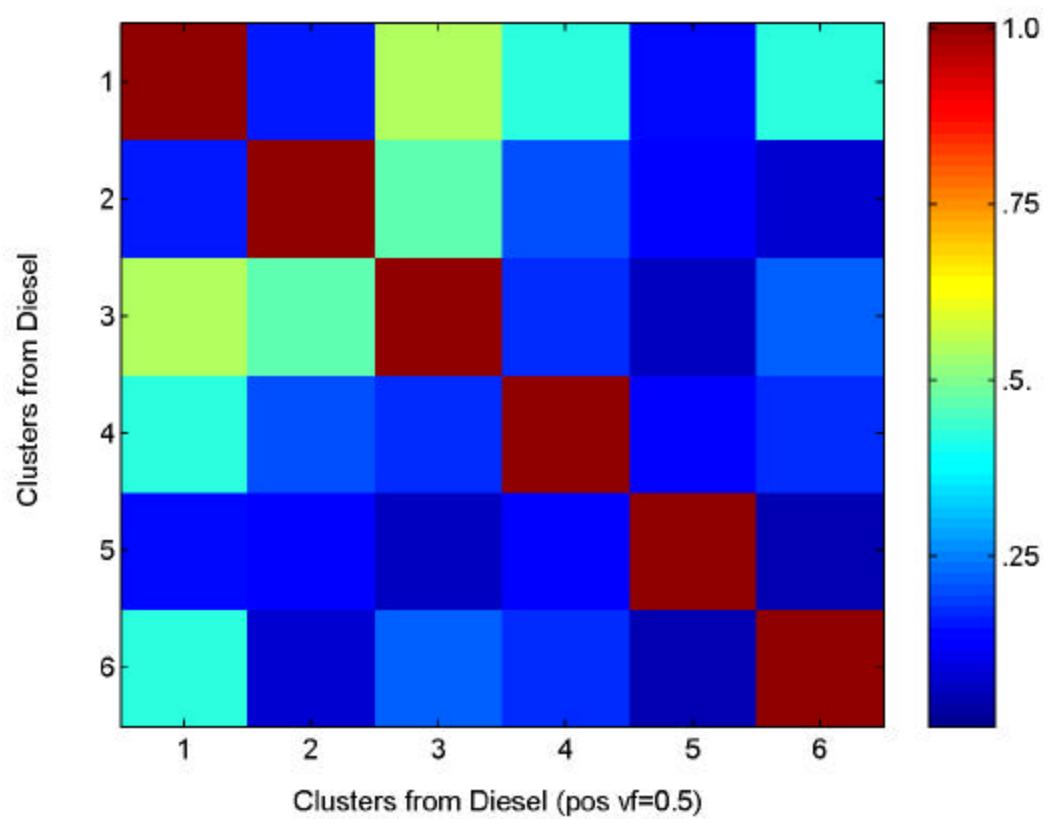


Figure 4.1

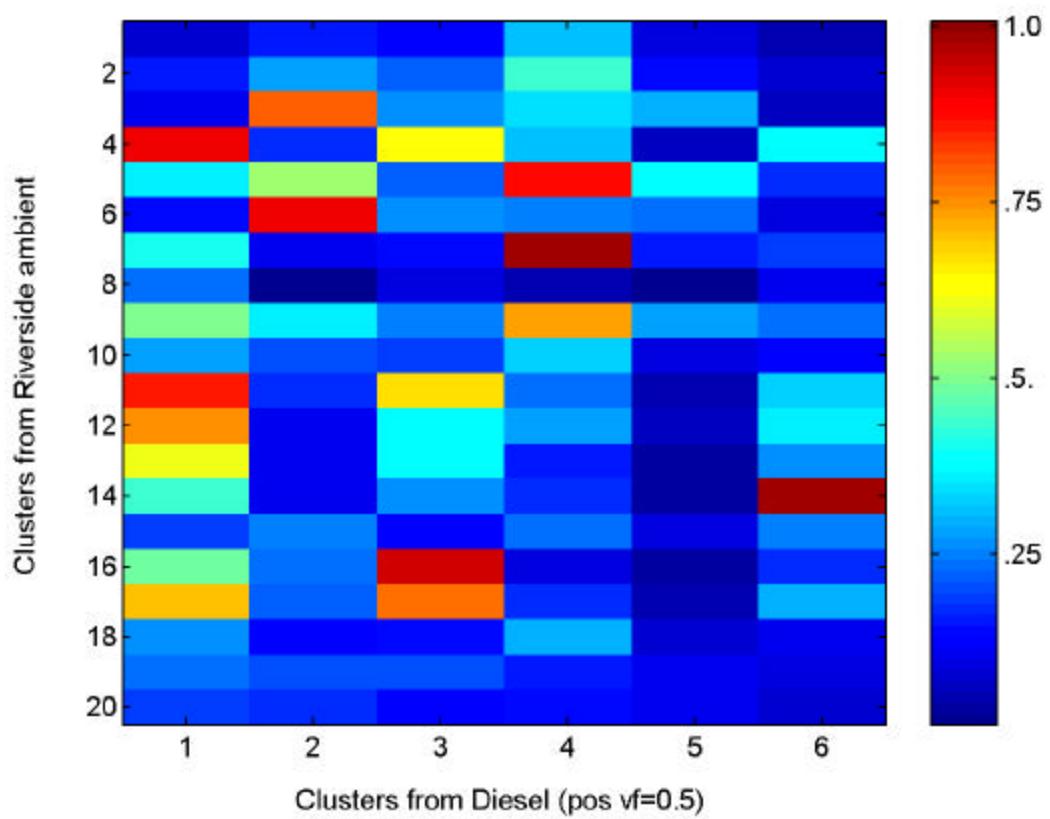


Figure 4.2

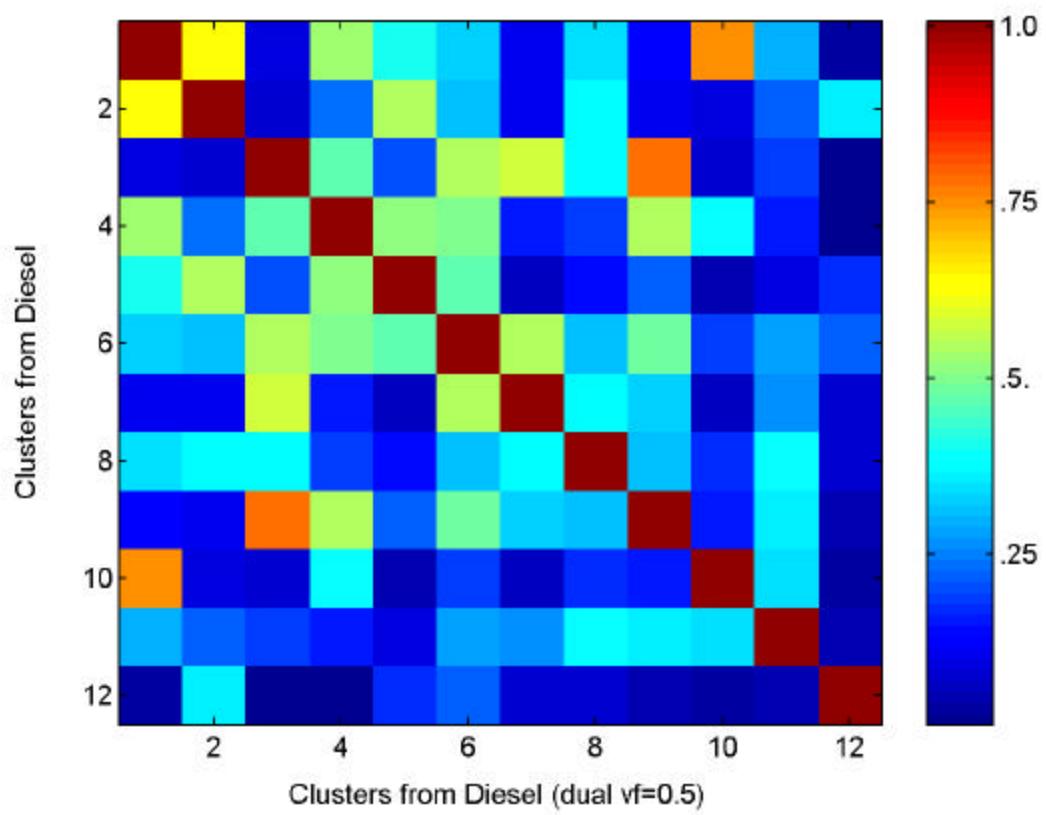


Figure 4.3

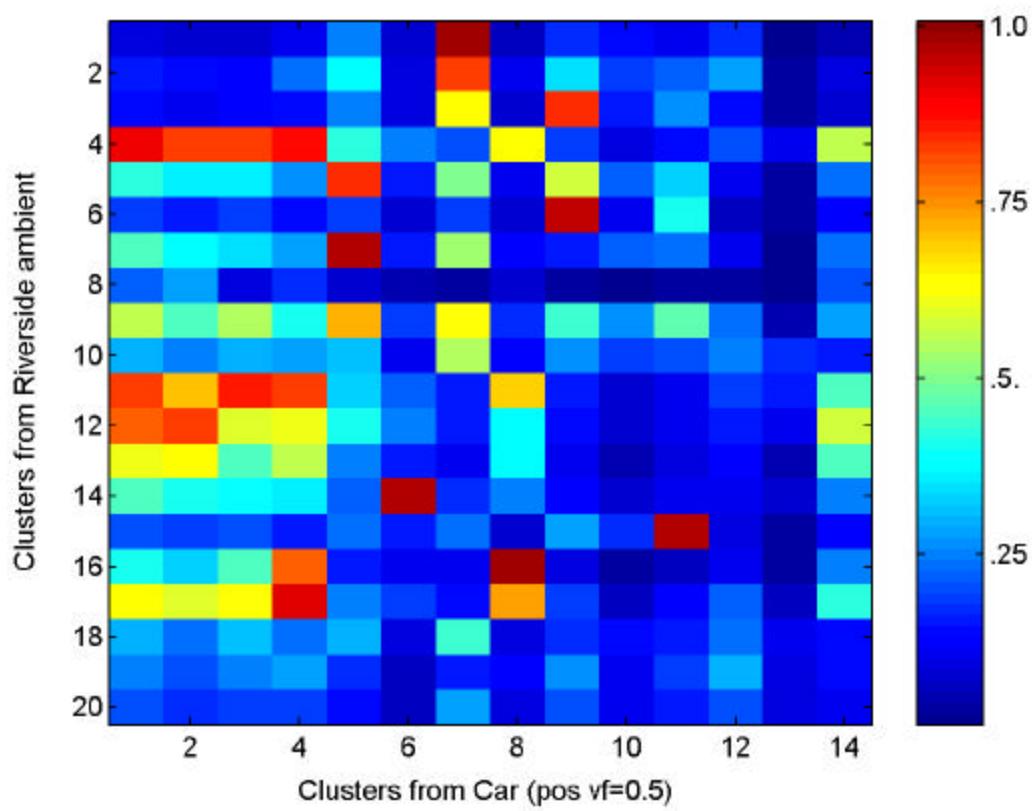
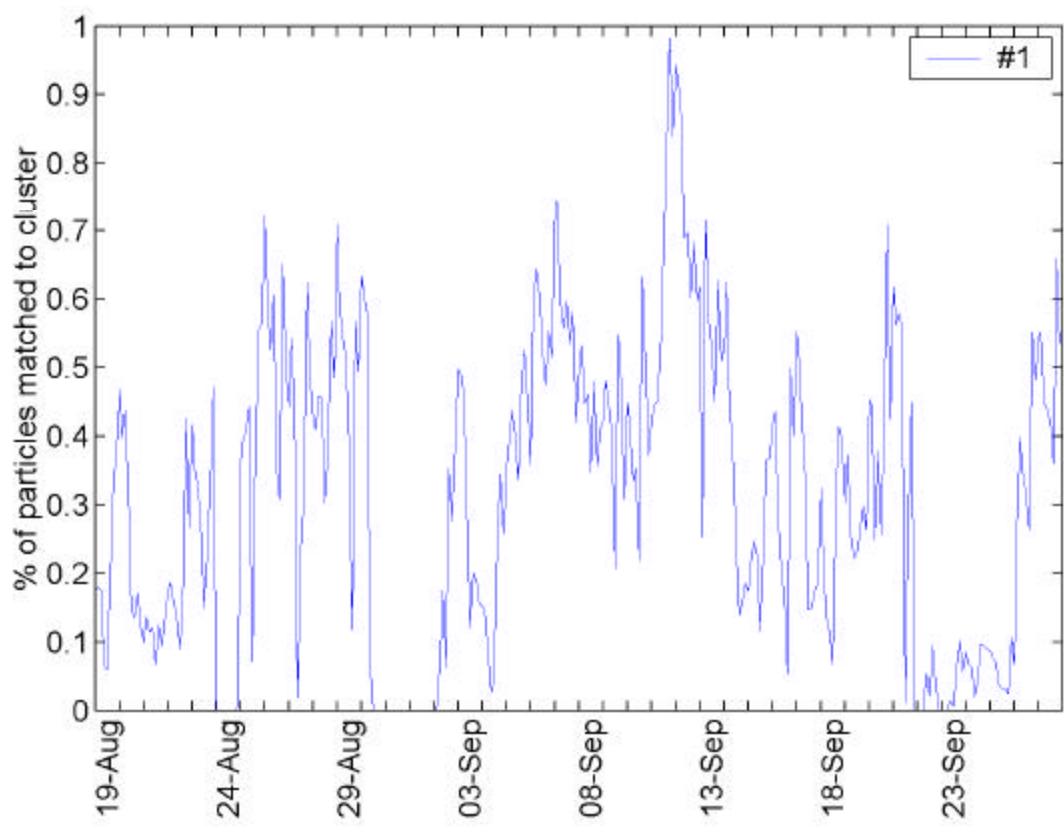


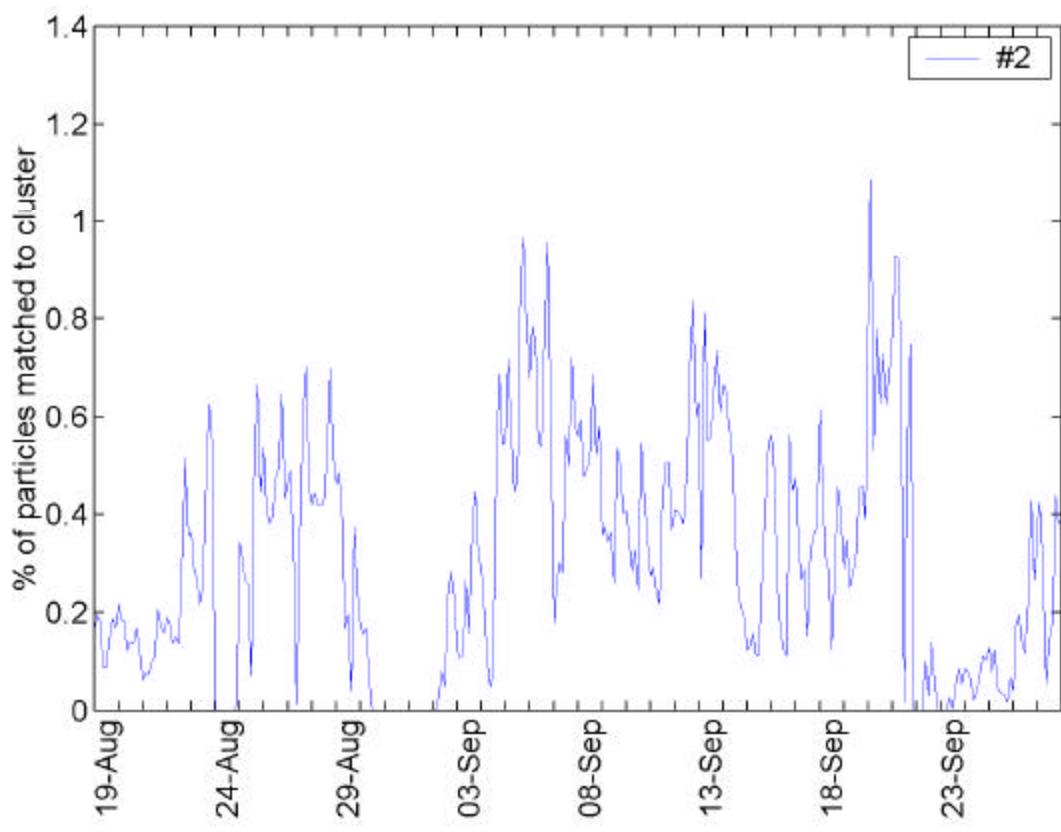
Figure 4.4

Appendix Q: Temporal plots of clusters #1-20 in Riverside over 40 consecutive days between August 19, 1997 and September 27, 1997 during SCOS97-NARSTO.

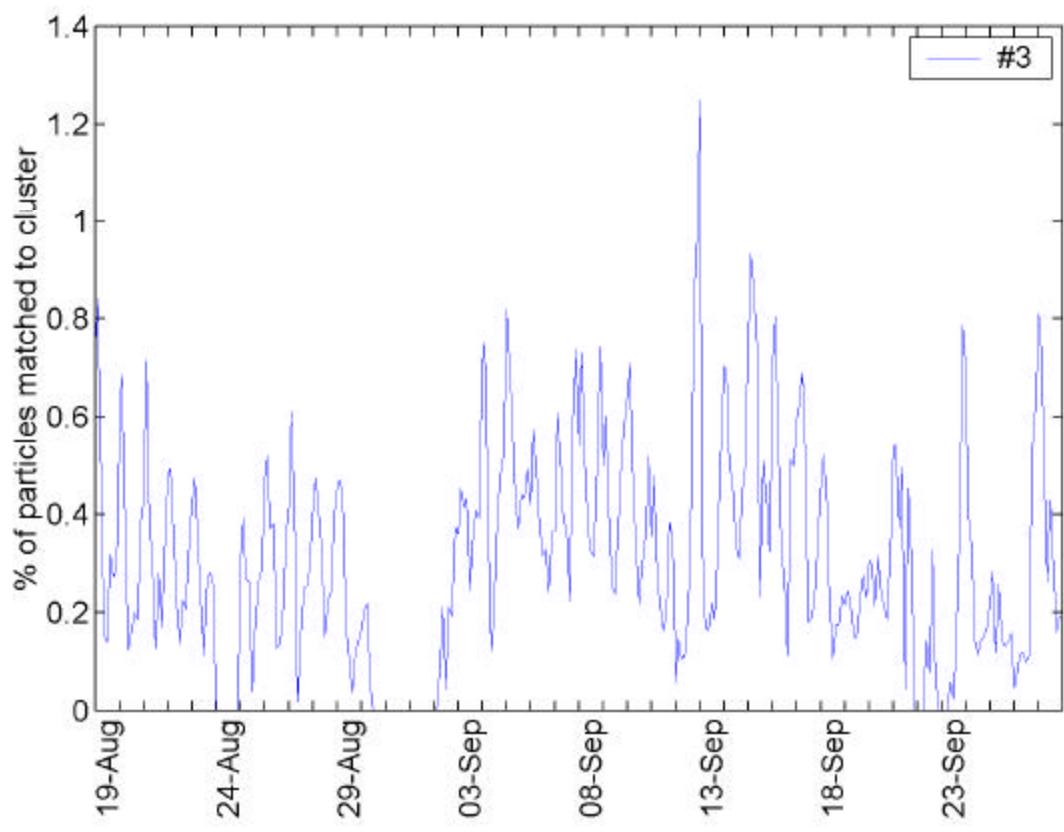


Temporal plot of cluster #1 in Riverside over 40 consecutive days between August 19, 1997 and September 27, 1997 during SCOS97.

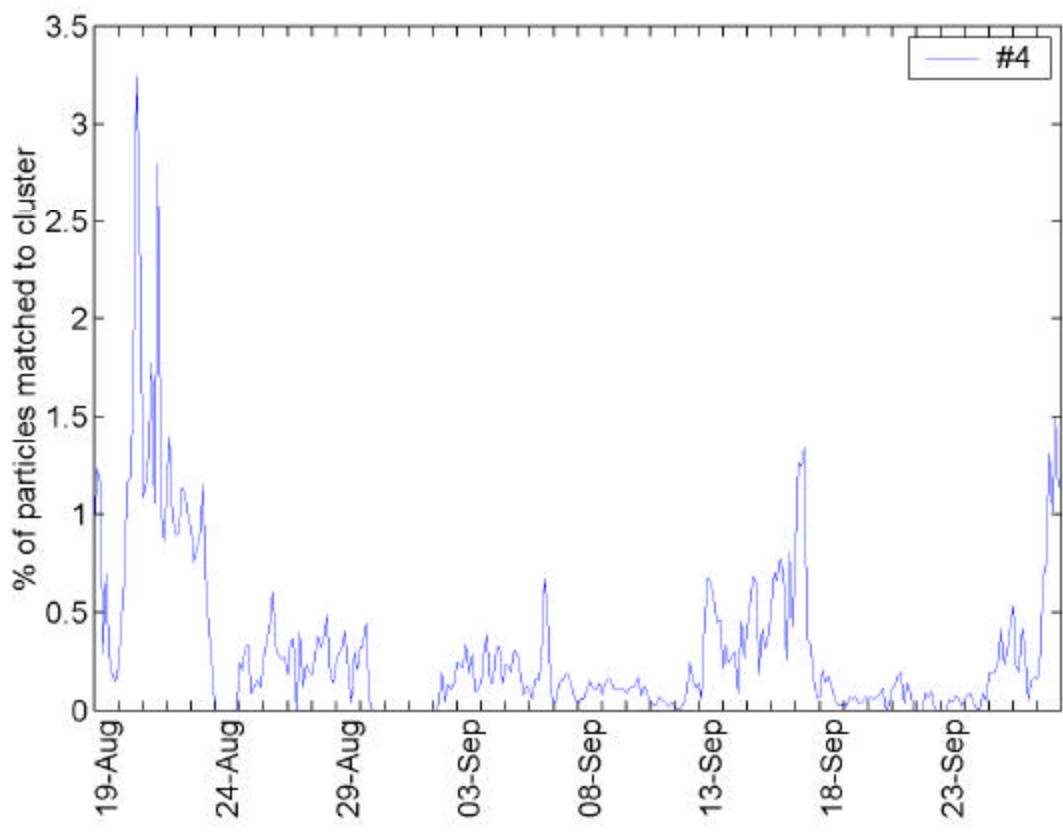
August 19, 1997 and September 27, 1997 during SCOS97.



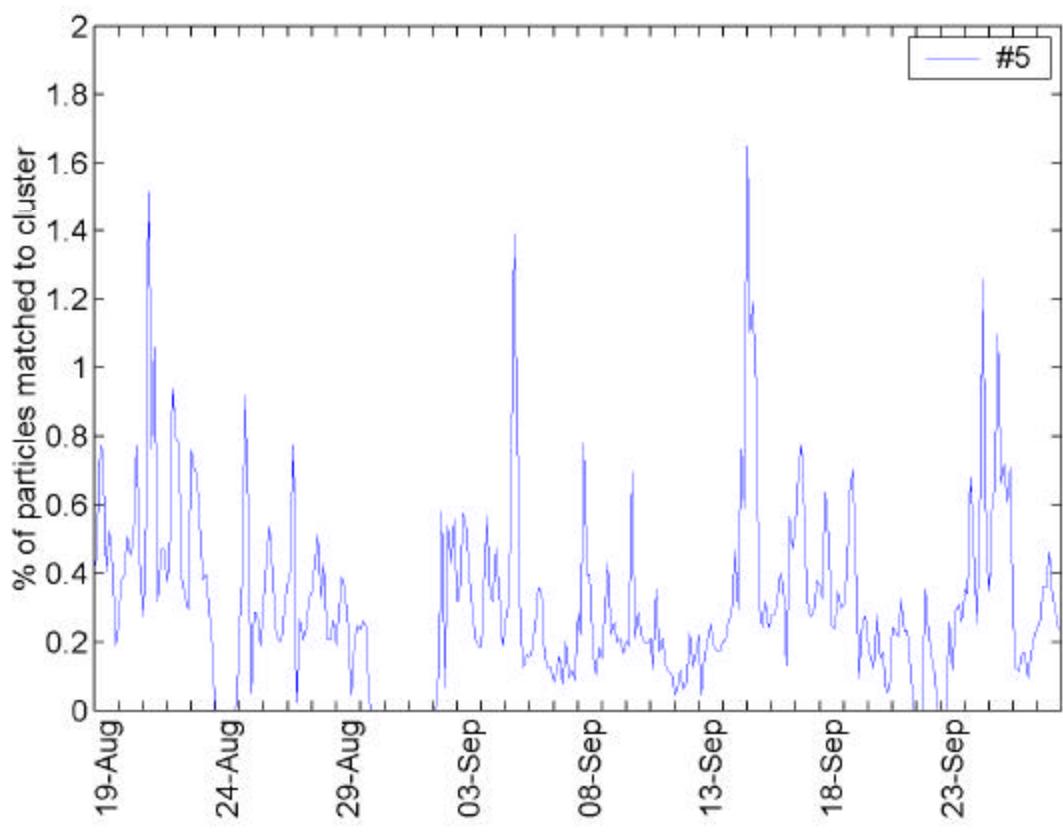
Temporal plot of cluster #3 in Riverside over 40 consecutive days between August 19, 1997 and September 27, 1997 during SCOS97.



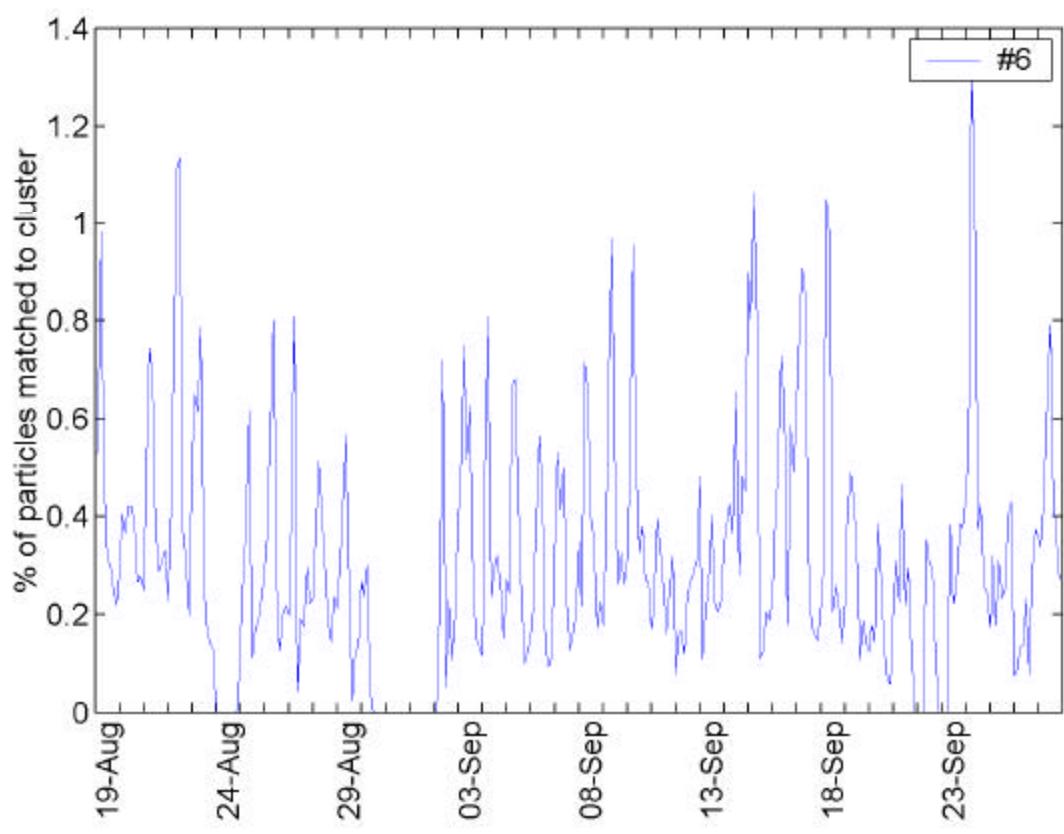
Temporal plot of cluster #4 in Riverside over 40 consecutive days between August 19, 1997 and September 27, 1997 during SCOS97.



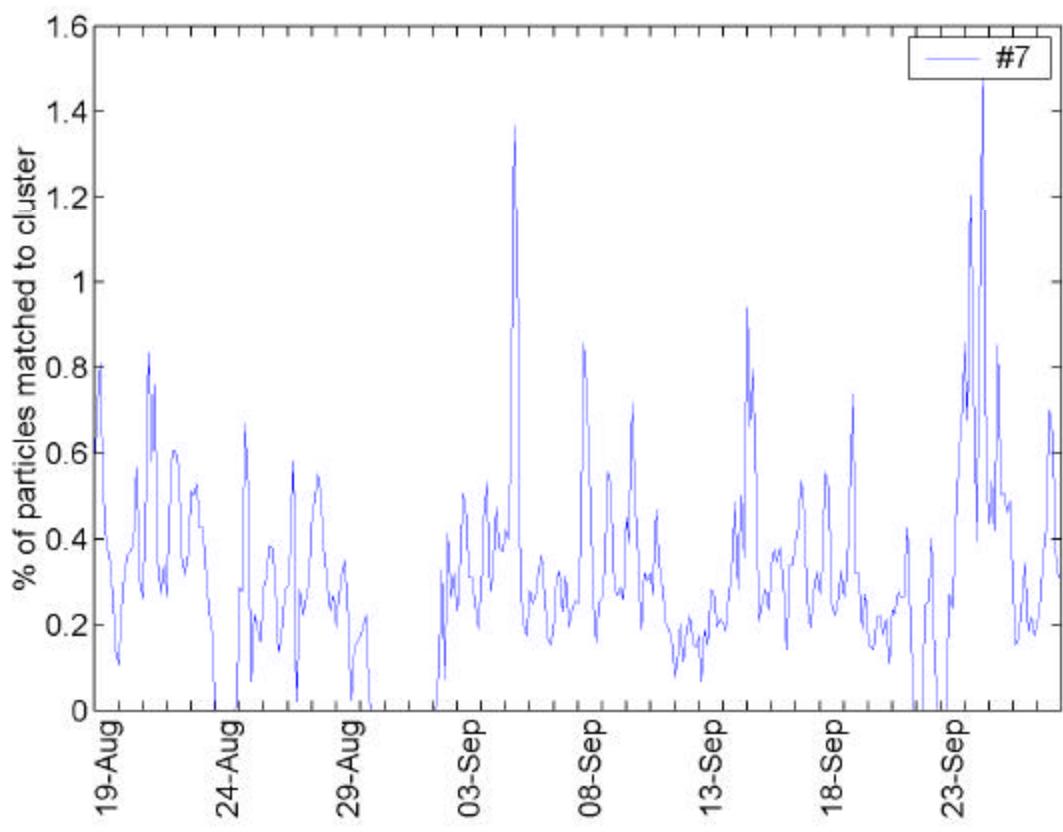
Temporal plot of cluster #5 in Riverside over 40 consecutive days between August 19, 1997 and September 27, 1997 during SCOS97.



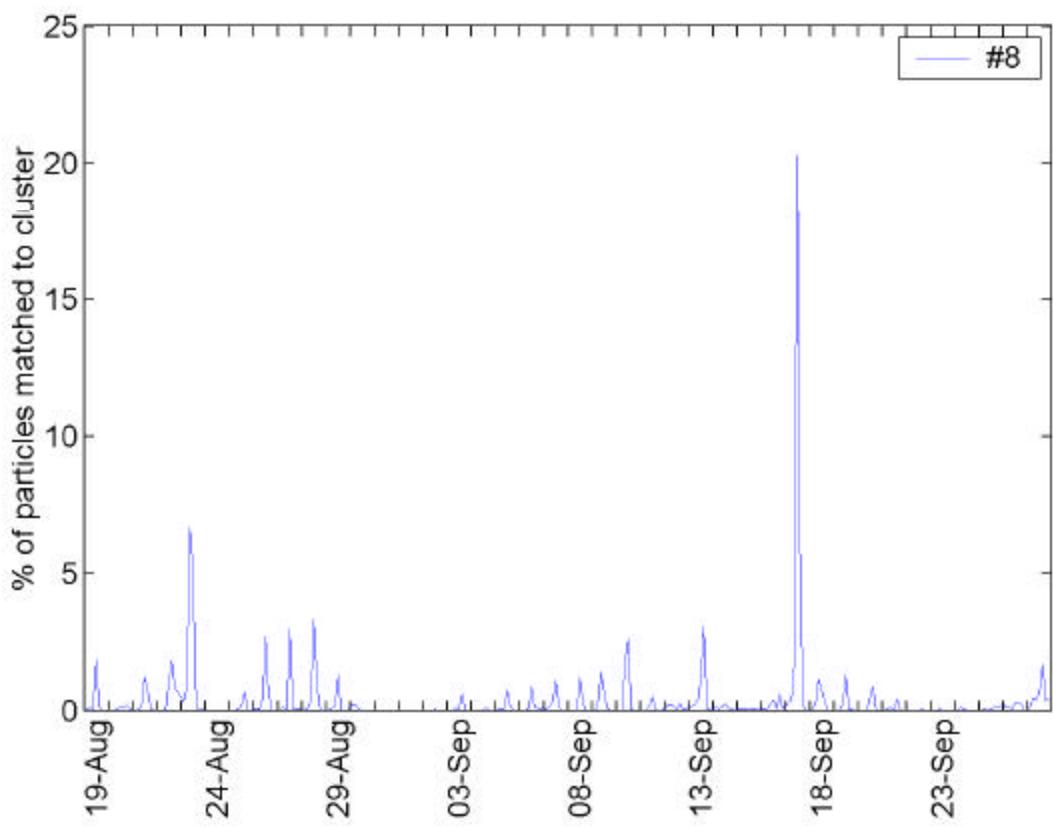
Temporal plot of cluster #6 in Riverside over 40 consecutive days between August 19, 1997 and September 27, 1997 during SCOS97.



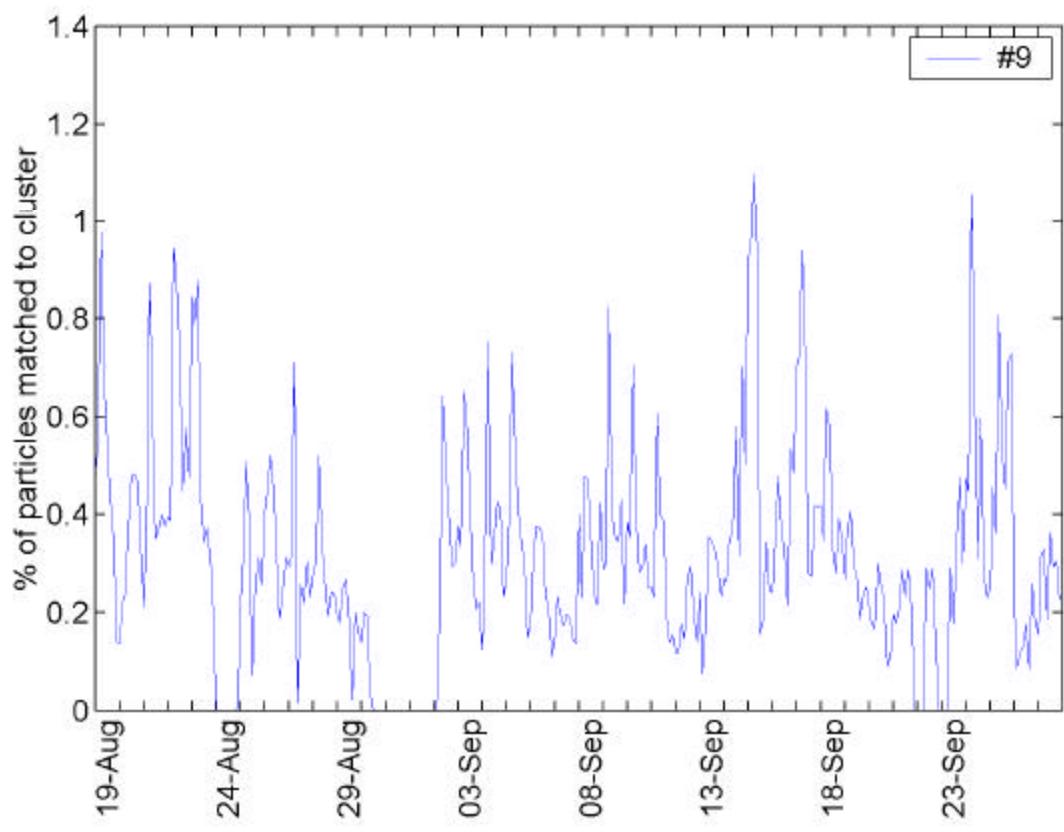
Temporal plot of cluster #7 in Riverside over 40 consecutive days between August 19, 1997 and September 27, 1997 during SCOS97.



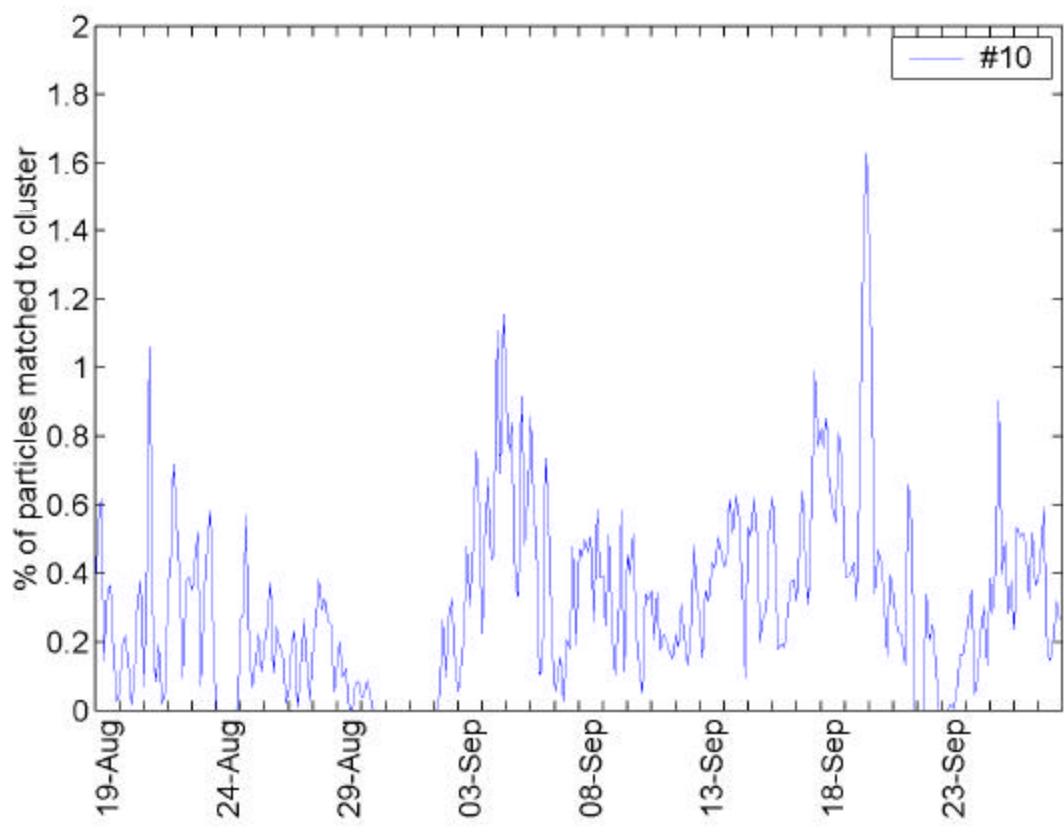
Temporal plot of cluster #8 in Riverside over 40 consecutive days between August 19, 1997 and September 27, 1997 during SCOS97.

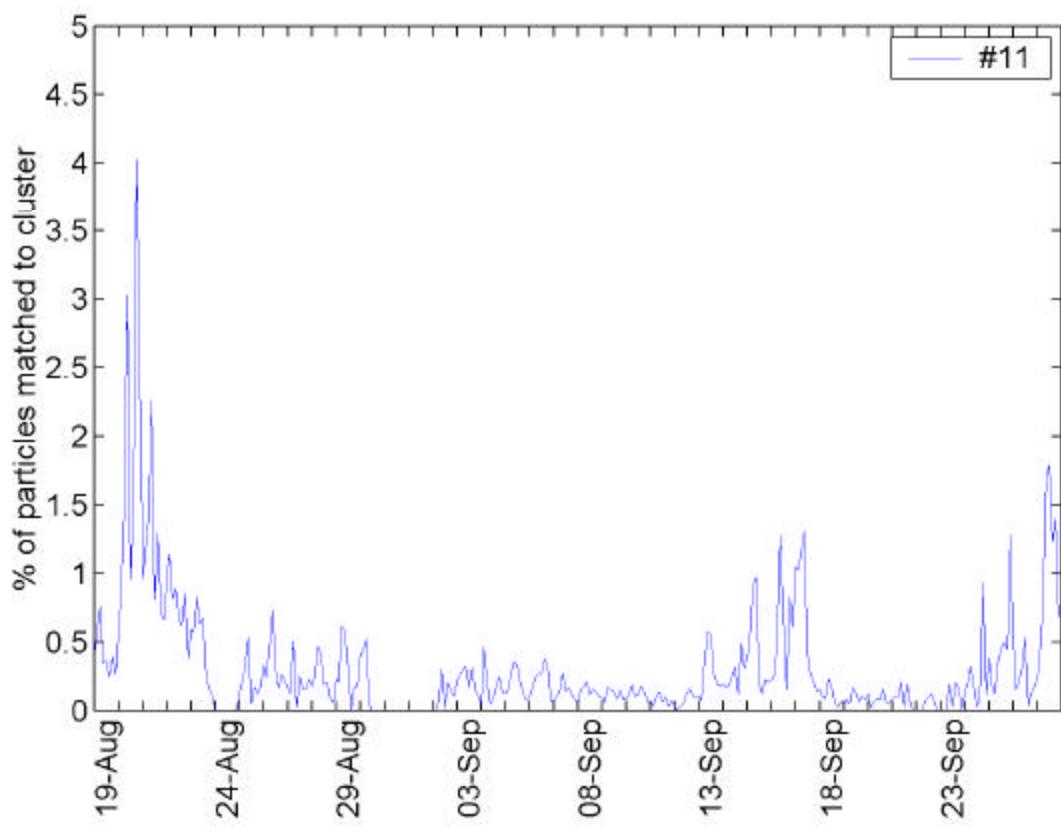


Temporal plot of cluster #9 in Riverside over 40 consecutive days between August 19, 1997 and September 27, 1997 during SCOS97.

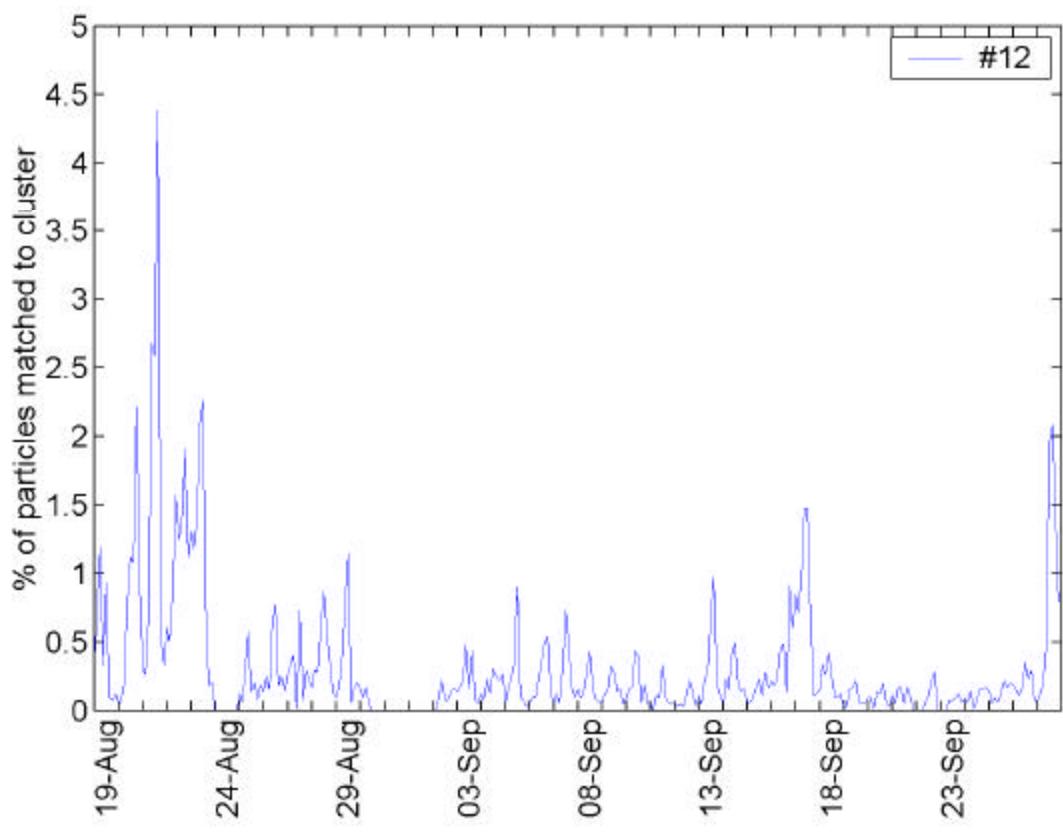


Temporal plot of cluster #10 in Riverside over 40 consecutive days between August 19, 1997 and September 27, 1997 during SCOS97.



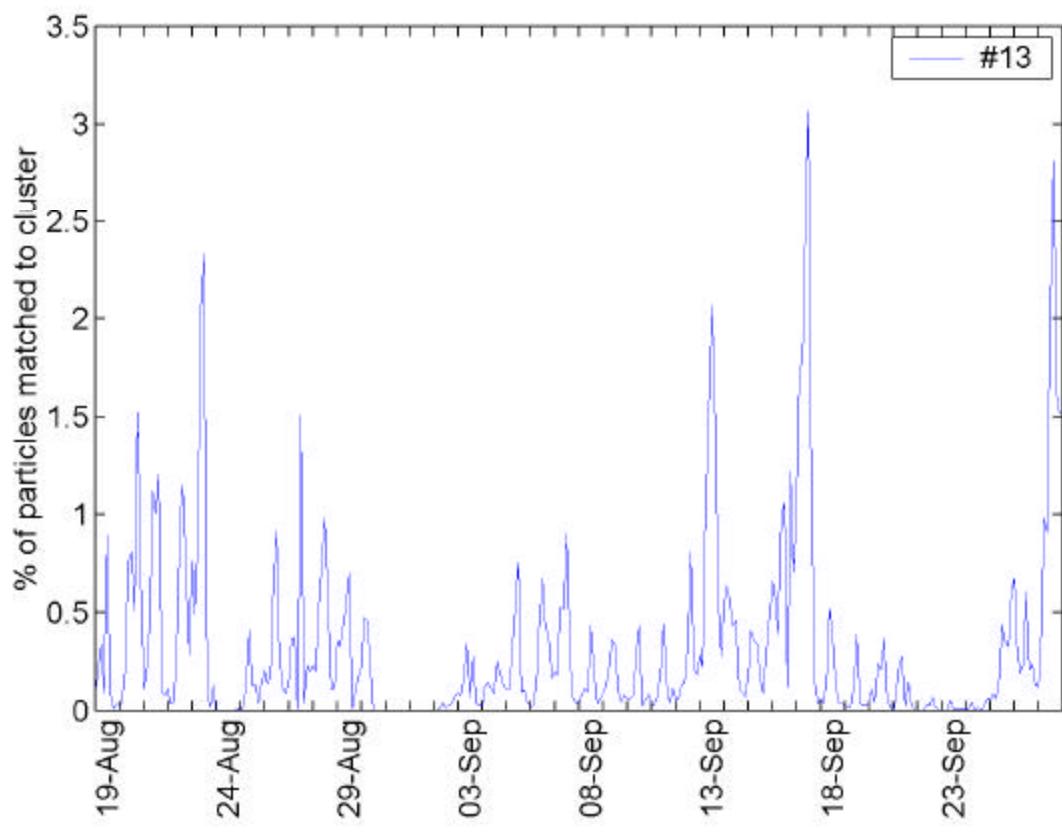


Temporal plot of cluster #11 in Riverside over 40 consecutive days between August 19, 1997 and September 27, 1997 during SCOS97.

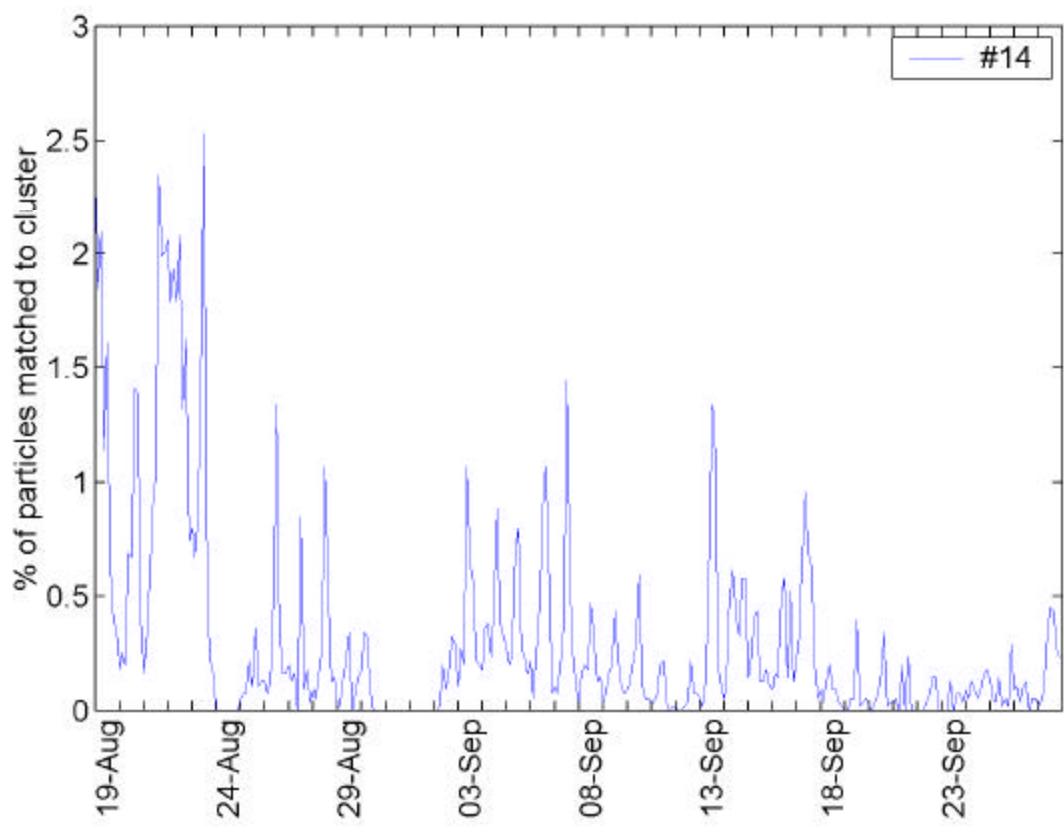


Temporal plot of cluster #13 in Riverside over 40 consecutive days between
August 19, 1997 and September 27, 1997 during SCOS97.

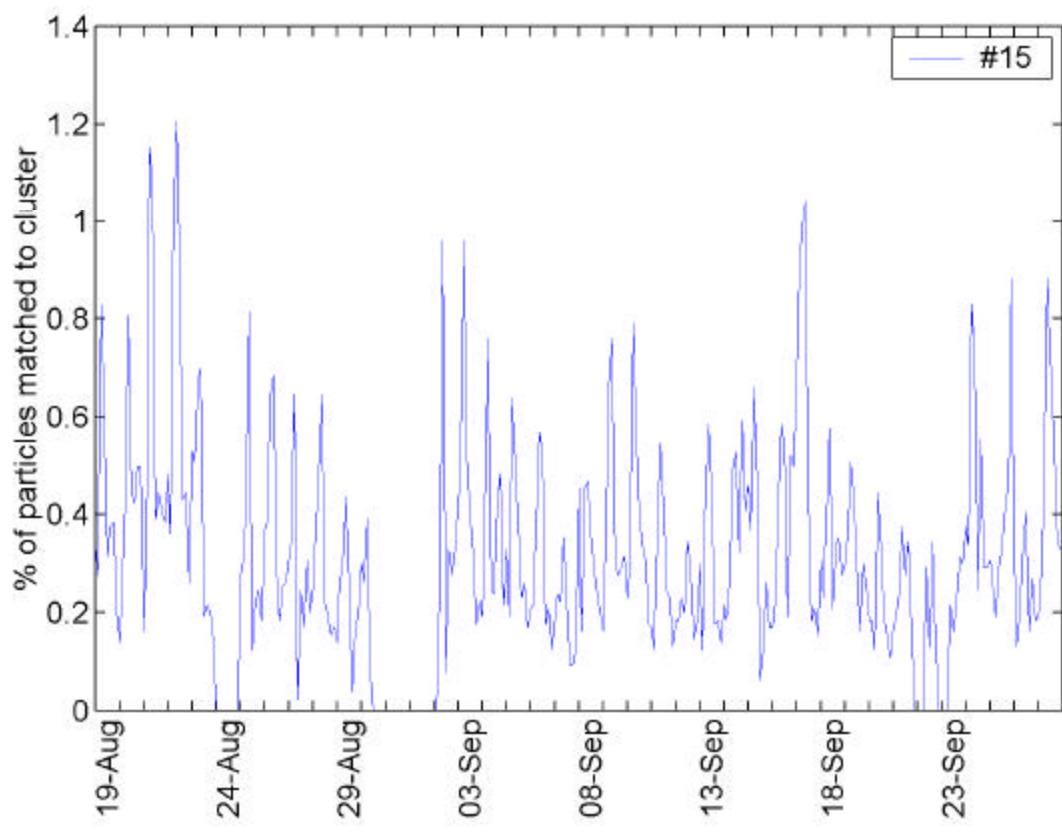
August 19, 1997 and September 27, 1997 during SCOS97.



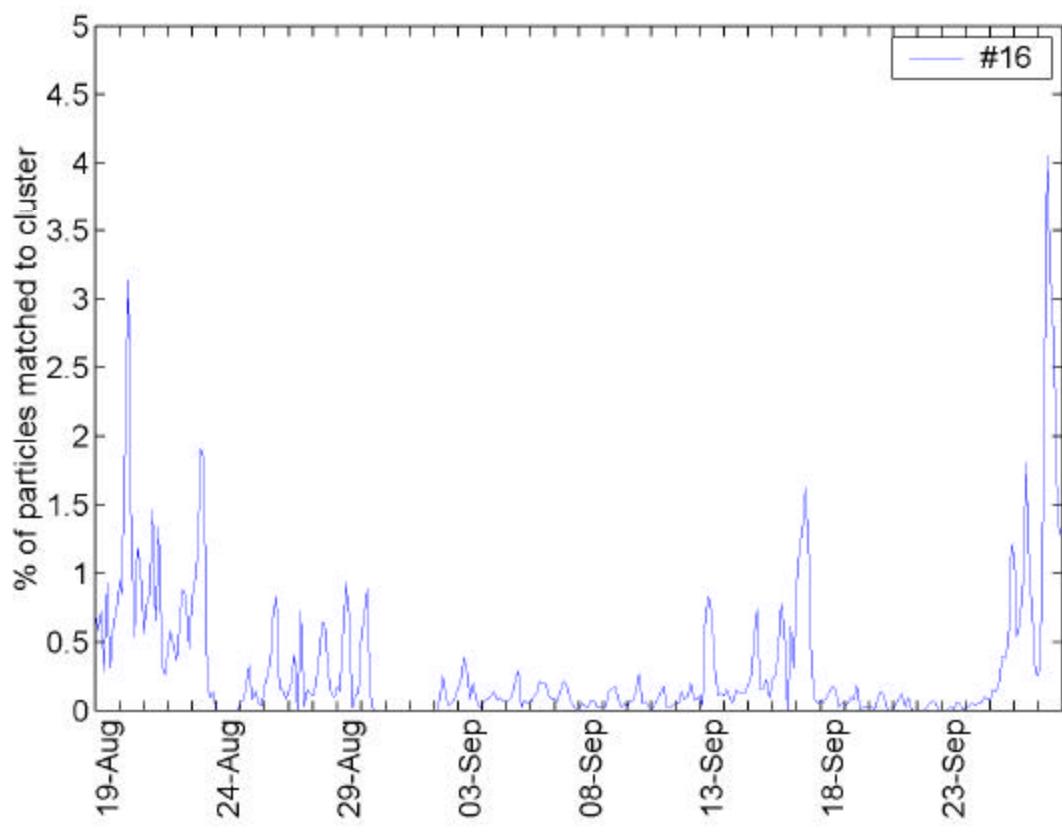
Temporal plot of cluster #14 in Riverside over 40 consecutive days between August 19, 1997, and September 27, 1997 during SCOS97.



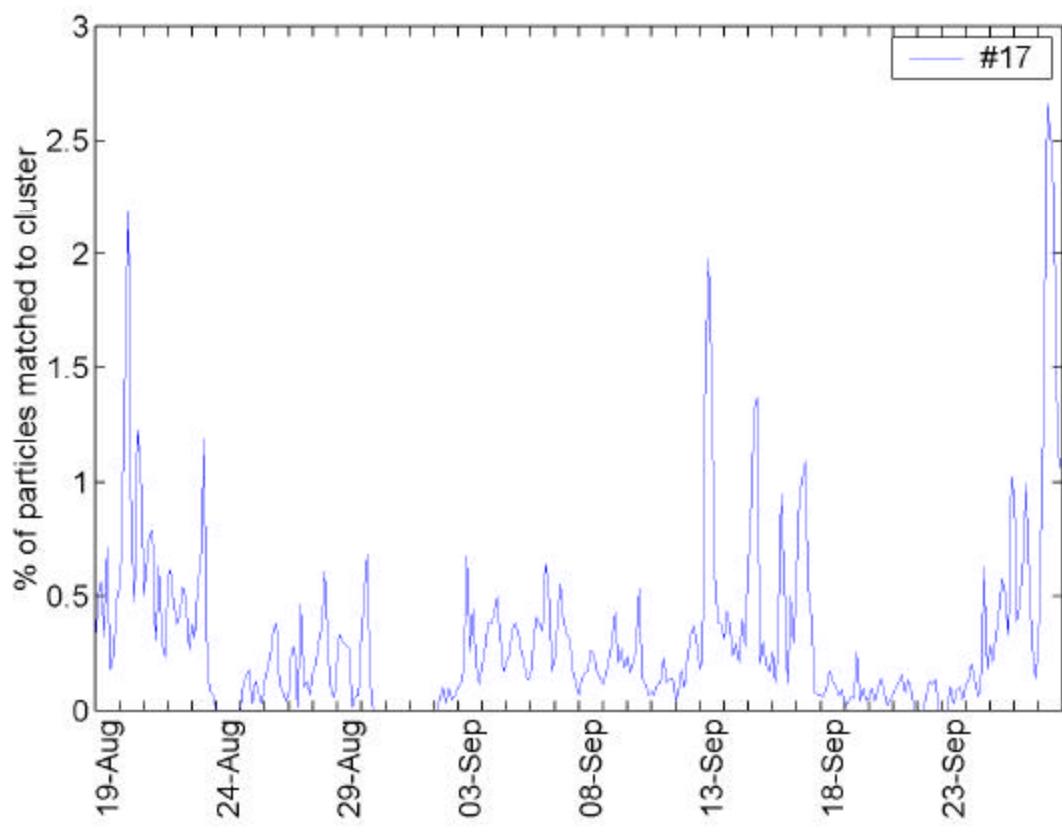
Temporal plot of cluster #15 in Riverside over 40 consecutive days between August 19, 1997, and September 27, 1997 during SCOS97.



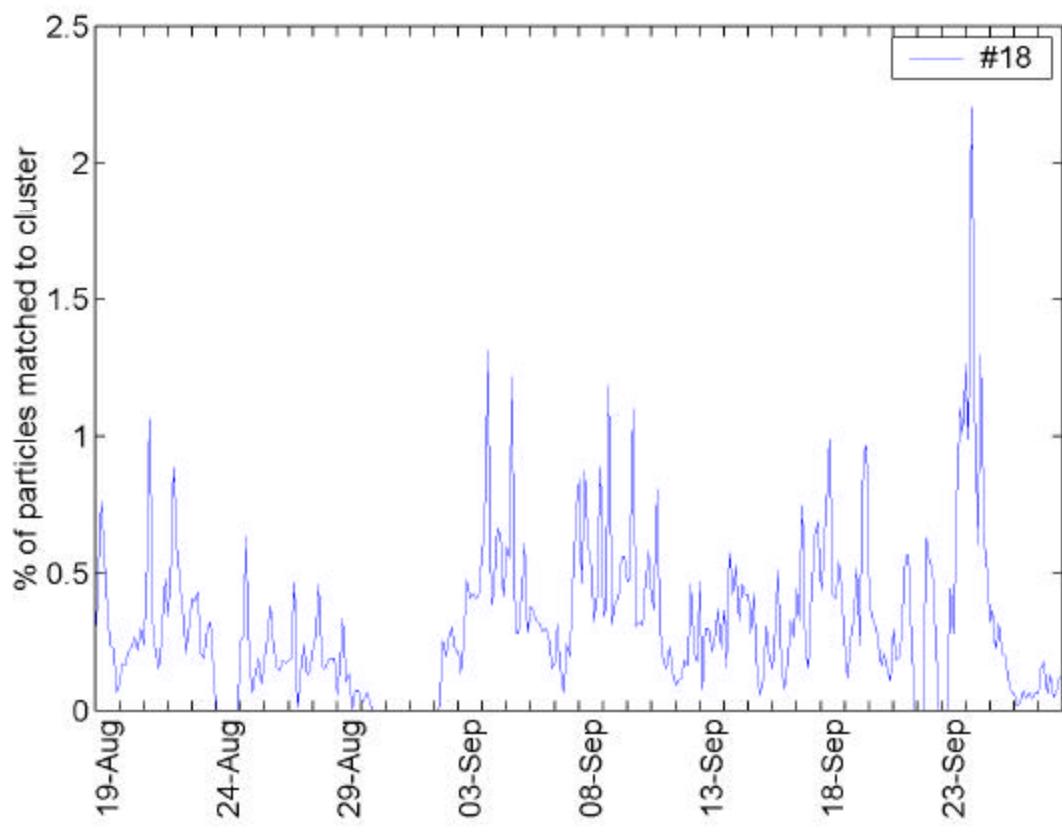
Temporal plot of cluster #16 in Riverside over 40 consecutive days between August 19, 1997 and September 27, 1997 during SCOS97.



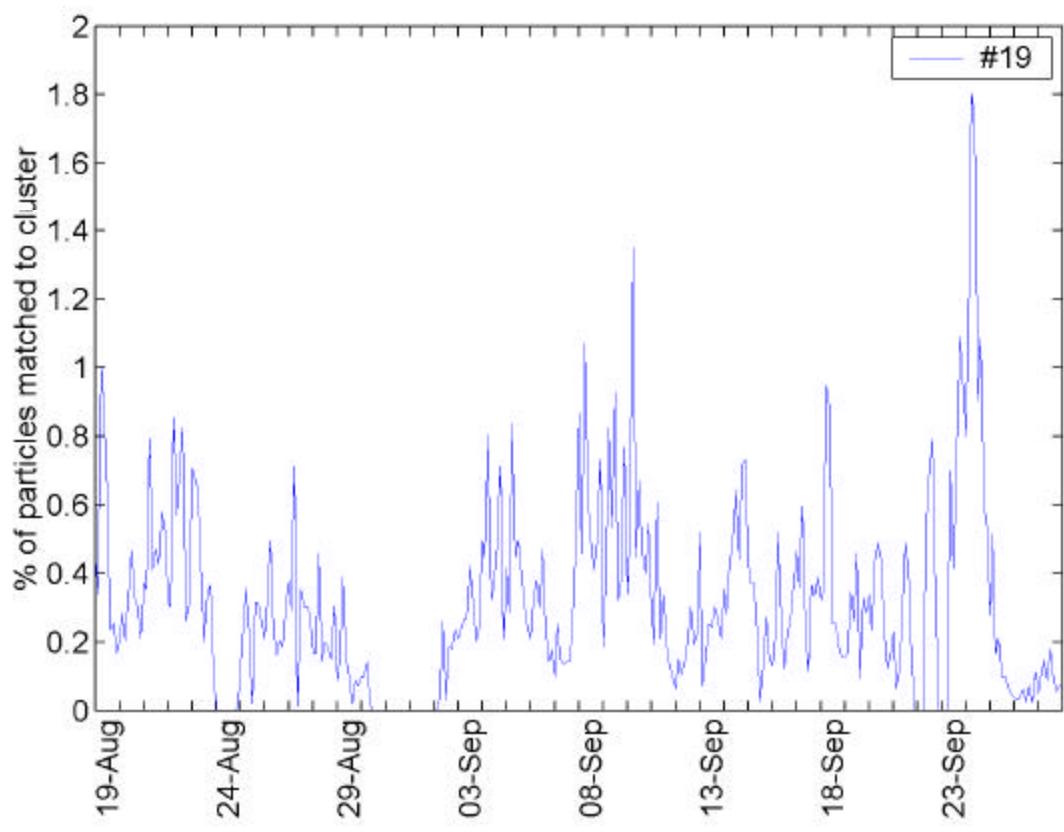
Temporal plot of cluster #17 in Riverside over 40 consecutive days between August 19, 1997 and September 27, 1997 during SCOS97.

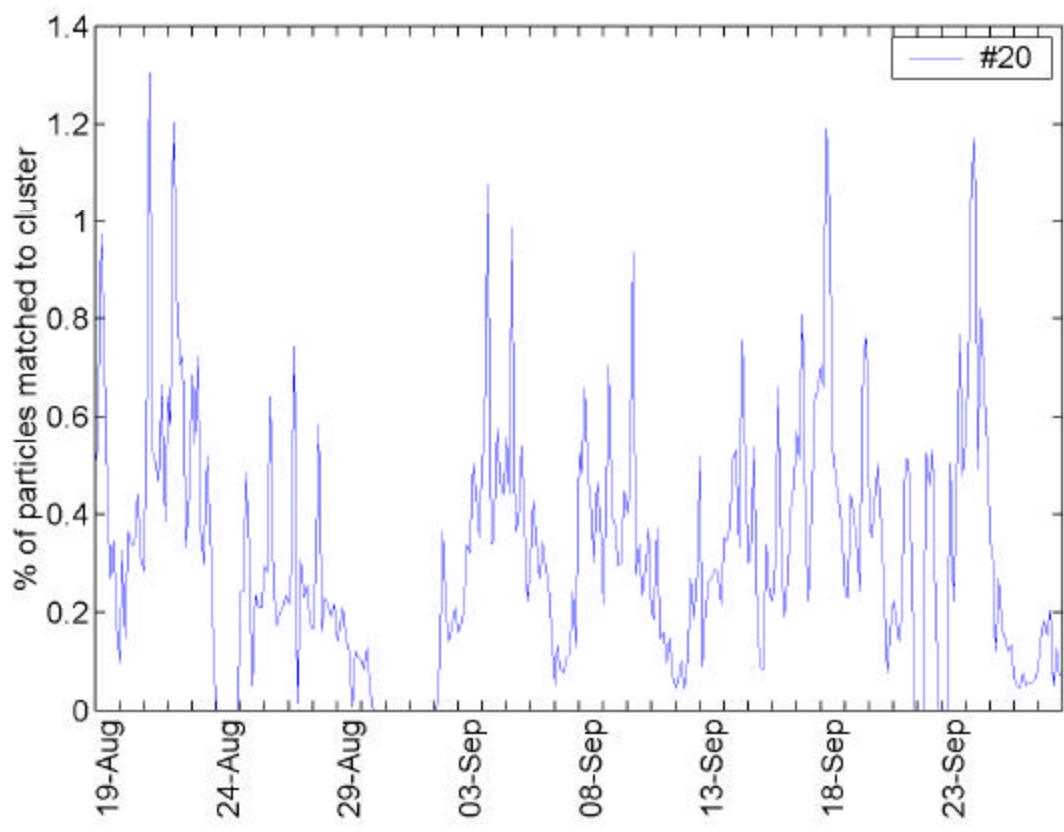


Temporal plot of cluster #18 in Riverside over 40 consecutive days between August 19, 1997, and September 27, 1997 during SCOS97.



Temporal plot of cluster #19 in Riverside over 40 consecutive days between August 19, 1997 and September 27, 1997 during SCOS97.





Temporal plot of cluster #20 in Riverside over 40 consecutive days between August 19, 1997 and September 27, 1997 during SCOS97.

Appendix R: List of publications directly supported as part of this contract.

1. Bhave, P. V., Allen, J. O., Morrical, B. D., Fergenson, D. P., Cass, G. R. and Prather, K. A., 2002. A field-based approach for determining ATOFMS instrument sensitivities to ammonium and nitrate. *Environmental Science and Technology* 36, 4868-4879.
2. Bhave, P. V., Kleeman, M. J., Allen, J. O. and Hughes, L. S., 2002. Evaluation of an air quality model for the size and composition of source-oriented particle classes. *Environmental Science and Technology* 36, 2154-2163.
3. Song, X.-H., Faber, N. M., Hopke, P. K., Suess, D. T., Prather, K. A., Schauer, J. J. and Cass, G. R., 2001. Source apportionment of gasoline and diesel by multivariate calibration based on single particle mass spectral data. *Analytica Chimica Acta* 446, 329-343.
4. Guazzotti, S. A., Whiteaker, J. R., Suess, D., Coffee, K. R. and Prather, K. A., 2001. Real-time measurements of the chemical composition of size-resolved particles during a Santa Ana wind episode, California USA. *Atmospheric Environment* 35, 3229-3240.
5. Galli, M., Guazzotti, S. A. and Prather, K. A., 2001. Improved lower particle size limit for aerosol time-of-flight mass spectrometry. *Aerosol Science and Technology* 34, 381-385.
6. Fergenson, D. P., Song, X.-H., Ramadan, Z., Allen, J. O., Hughes, L. S., Cass, G. R., Hopke, P. K. and Prather, K. A., 2001. Quantification of ATOFMS data by multivariate methods. *Analytical Chemistry* 73, 3535-3541.
7. Bhave, P. V., Fergenson, D. P., Prather, K. A. and Cass, G. R., 2001. Source apportionment of fine particulate matter by clustering single-particle data: Tests of receptor model accuracy. *Environmental Science and Technology* 35, 2060-2072.
8. Silva, P. J., Carlin, R. A. and Prather, K. A., 2000. Single particle analysis of suspended soil dust from southern California. *Atmospheric Environment* 34, 1811-1820.
9. Liu, D.-Y., Prather, K. A. and Hering, S. V., 2000. Variations in the size and chemical composition of nitrate-containing particles in Riverside, CA. *Aerosol Science and Technology* 33, 71-86.
10. Hughes, L. S., Allen, J. O., Bhave, P., Kleeman, M. J., Cass, G. R., Liu, D. Y., Fergenson, D. P., Morrical, B. D. and Prather, K. A., 2000. Evolution of atmospheric particles along trajectories crossing the Los Angeles basin. *Environmental Science and Technology* 34, 3058-3068.
11. Gross, D. S., Gaelli, M. E., Silva, P. J. and Prather, K. A., 2000. Relative sensitivity factors for alkali metal and ammonium cations in single-particle aerosol time-of-flight mass spectra. *Analytical Chemistry* 72, 416-422.

12. Gross, D. S., Galli, M. E., Silva, P. J., Wood, S. H., Liu, D.-Y. and Prather, K. A., 2000. Single particle characterization of automobile and diesel truck emissions in the caldecott tunnel. *Aerosol Science and Technology* 32, 152-163.
13. Allen, J. O., Fergenson, D. P., Gard, E. E., Hughes, L. S., Morrical, B. D., Kleeman, M. J., Gross, D. S., Gaelli, M. E., Prather, K. A. and Cass, G. R., 2000. Particle detection efficiencies of aerosol time of flight mass spectrometers under ambient sampling conditions. *Environmental Science and Technology* 34, 211-217.
14. Song, X.-H., Hopke, P. K., Fergenson, D. P. and Prather, K. A., 1999. Classification of single particles analyzed by ATOFMS using an artificial neural network, art-2a. *Analytical Chemistry* 71, 860-865.
15. Silva, P. J., Liu, D.-Y., Noble, C. A. and Prather, K. A., 1999. Size and chemical characterization of individual particles resulting from biomass burning of local southern California species. *Environmental Science and Technology* 33, 3068-3076.
16. Prather, K. A. and Mayer, J. E. (1999). Portable analyzer for determining size and chemical composition of an aerosol. U.S. US, (The Regents of the University of California, USA). 23 pp., Cont.-in-part of U.S. 5,681,752.
17. Hughes, L. S., Allen, J. O., Kleeman, M. J., Johnson, R. J., Cass, G. R., Gross, D. S., Gard, E. E., Gaelli, M. E., Morrical, B. D., Fergenson, D. P., Dienes, T., Noble, C. A., Liu, D.-Y., Silva, P. J. and Prather, K. A., 1999. Size and composition distribution of atmospheric particles in southern California. *Environmental Science and Technology* 33, 3506-3515.
18. Gard, E., Mayer, J. E., Morrical, B. D., Dienes, T., Fergenson, D. P. and Prather, K. A., 1997. Real-time analysis of individual atmospheric aerosol particles: Design and performance of a portable ATOFMS. *Analytical Chemistry* 69, 4083-4091.
19. Gard, E. E., Kleeman, M. J., Gross, D. S., Hughes, L. S., Allen, J. O., Morrical, B. D., Fergenson, D. P., Dienes, T., Galli, M. E., Johnson, R. J., Cass, G. R. and Prather, K. A., 1998. Direct observation of heterogeneous chemistry in the atmosphere. *Science* (Washington, D. C.) 279, 1184-1187.
20. Pastor, S. H., J. O. Allen, L. S. Hughes, P. Bhave, G. R. Cass and K. A. Prather (2003). "Ambient single particle analysis in Riverside, CA by aerosol time-of-flight mass spectrometry during SCOS97-NARSTO." *Atmospheric Environment* **in press**.

- J. O. Allen, D. P. Fergenson, E. E. Gard, L. S. Hughes, B. D. Morrical, M. J. Kleeman, D. S. Gross, M. E. Gaelli, K. A. Prather and G. R. Cass (2000) Particle detection efficiencies of aerosol time of flight mass spectrometers under ambient sampling conditions, *Environ. Sci. Technol.* **34**, 211-217.
- J. C. Chow, J. G. Watson, E. M. Fujita, Z. Lu, D. R. Lawson and L. L. Ashbaugh (1994) Temporal and spatial variations of pm2.5 and pm10 aerosol in the southern California air quality study, *Atmos. Environ.* **28**, 2061-80.
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